CONSTRUCTIVIST- INFORMED TEACHING IN TEACHER PREPARATION AT TEACHER TRAINING INSTITUTIONS IN SOUTH EASTERN UGANDA

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A DISSERTATION SUBMITTED TO THE DIRECTORATE OF RESEARCH AND GRADUATE TRAINING IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN EDUCATION OF KYAMBOGO UNIVERSITY

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Declaration

I, Emmanuel Humphrey Gusango, declare that this dissertation titled, **"***Constructivist-Informed Teaching in Teacher Preparation at Teacher Training Institutions in South Eastern Uganda,*" is my original work which has never been submitted to any institution for any award. I now submit it to the Directorate of Research and Graduate Training of Kyambogo University with the approval of my supervisors.

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NAME

Approval

This dissertation titled, **"***Constructivist- Informed Teaching in Teacher Preparation at Teacher Training Institutions in South Eastern Uganda*," by Emmanuel Humphrey Gusango, has been developed with our guidance and it is now being submitted for examination with our consent as supervisors.

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Supervisor

Dedication

I dedicate this dissertation to my family and my mother, Mrs. Janet Irene Muyodi Kubonaku Lukendakenda.

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Abbreviations and Acronyms

AJEP	American Journal of Education and Practice
BTE	Bachelor of Teacher Education
CAL	Computer Aided Learning
CCTs	Coordinating Centre Tutors
CIT	Constructivists- Informed Teaching
CLE	Constructivists' Learning Environment
CLES	Constructivists' Learning Environment Survey Scale
CLT	Constructivist Learning Theory
CPD's	Continuous Professional Developments
CT	Constructivist Teaching
C-TEP	Certificate of Teacher Education Proficiency
DOS	Director of Studies
HOD	Head of Department
ICT	Information Communication Technology
GUREC	Gulu University Research Ethics Committee
MDGs	Millennium Development Goals
MoES	Ministry of Education and Sports
NAPE	National Assessment Progress in Education
NCERT	National Council of Educational Research and Training
NCF	National Curriculum Framework
NTP	National Teacher Policy
PCK	Pedagogical Content Knowledge
PD	Professional Development
POC	Post Observation Conference
PTCs	Primary Teachers' Colleges
PTE	Primary Teacher Education
QDAS	Qualitative Data Analysis Software
RPL	Reflective Practice Laboratory

SDG4	Sustainable Development Goal Four
SP	School Practice
TIET	Teacher Instructor Education and Training
TIISA	Teacher Initiative in Sub Saharan Africa
TP	Teaching Practice
TTIs	Teacher Training Institutions
UNEB	Uganda National Examinations Board
UNITE	Uganda National Institute of Teacher Education.
UNSCT	Uganda National Council for Science and Technology
UNESCO	United Nations Educational, Scientific and Cultural Organisation

Abstract

The urgent need in the Ugandan education system is for teacher preparation programme that offer opportunities of constructivist teaching experiences for students to enable them to gain pedagogical content, teaching skills and professionalism. Constructivist- Informed Teaching can guide tutors and students in Teacher Training Institutions (TTIs) to find effective ways to plan, teach and find appropriate activities with an increased importance attached to creative thinking and ability to construct one's own meaning and knowledge that enables preparation of holistic students for this complex interactive world. The study ***"Constructivist- Informed Teaching in Teacher Preparation at Teacher Training Institutions of South Eastern Uganda"*** focused on whether tutors carry out their teaching to enable students to construct their own ideas, knowledge, beliefs and values within the constructivists' learning environment. The study offers a perspective of teaching that deepens both critical and creative thinking among tutors and students. The purpose of this study was to assess the implementation of Constructivist- Informed Teaching in teacher preparation with the objectives to establish whether the constructivist approaches were being used to teach and prepare students, analyse the application of constructivist principles applied to school practice supervision and to examine the implementation of constructivist- guided coaching in the preparation of students' professional growth. The study was aimed to enable a crossover the 21st century through the suggested aspects for improvement in teacher preparation. The study explored beliefs, implementation and disparities between practice and Constructivist Theory in teacher preparation. Twenty participants were purposively sampled comprising of tutors and students from three Teacher Training Institutions in South Eastern Uganda. This was a qualitative study with a phenomenological research design where data was gathered using in-depth multiple interviews, observation, and document analysis. Data collection and analysis followed Moustakas procedure of data analysis. The results revealed that tutors continue to rely on traditional approaches in the teaching of students, where the clinical supervision approach is not used during school practice and minimal attention was given to the non-classroom based activities. This research study adds to the body of knowledge about ways in which Constructivist- Informed Teaching supports teaching effectiveness and promotes students' learning, amplifying the need for reflective practice in instruction at Teacher Training Institutions. Findings from this study will help to improve teacher preparation at the Teacher Training Institutions by supporting ongoing Continuous Professional Development through the use of several constructivists' practices that include reflection, clinical supervision, constructivist-guided coaching, and other interventions in a proper and professional setting. Additionally, these results will help in the implementation of the National Teacher Policy (2019) and will also support the review of the Teacher Training Institutions' Curricula being undertaken by the Uganda National Institute of Teacher Education.

Definition of Operational Terms

Coaching: Tutors' support to students during non- classroom based activities and co-curricular to enable their professional unfolding.

Constructivism: This refers to a theory that emphasizes knowledge construction by the learners as opposed to being mere recipients of knowledge.

Constructivist- Informed Teaching: a teacher-initiated learner- centered approach characterised by use of students' prior knowledge, shared control, dialogue, critical voice, reflection, inquiry, technology, self- knowledge construction, mutual respect of learners and active methods of teaching.

Cognitive Dissonance: Being in position to distinguish between prior and new knowledge.

Critical Voice: Students' freedom to express themselves, as well as to question tutors' methods, content and any emerging uncertainty.

Dialogue: It refers to the amicable intellectual interaction between a teacher and students during the lesson where they can express opinions, feelings and ideas.

Knowledge Construction: This describes an outcome of multiple opportunities given to students to investigate real problems, raise questions and to search for possible explanations while using diverse methodological approaches.

Personal Relevance: Taking into account students' personal experience and background when teaching.

Phenomena: Refers to things as human beings experience them.

Phenomenology: Refers to a descriptive study of how individuals experience a phenomenon and how people describe things and experiences through their senses.

Prior Knowledge: The act of a teacher stimulating knowledge that the student already knows about the subject and connecting the new experience to what students already know.

Professional Development: Refers to activities that enable students to improve on their individual skills, knowledge, expertise and other characteristics of a teacher.

Reflection: Looking back into one's actions and thoughts**.**

School Practice: A teacher preparation phase where students go out to primary schools to practice and demonstrate what they have learnt about teaching and to experience school life.

Shared Control: Students' freedom to participate in decisions, setting the learning environment, as well as planning learning activities and their assessment.

Teacher Educators: The tutors or professional teaching staff in Primary Teachers' Colleges.

Teacher Preparation: Refers to the preparation of students in a teachers' college comprised of a series of activities for students' engagement that enable them to become professional teachers**.**

Tutors: A special name for teachers in PTCs/ TTIs, at times used interchangeably with the terms "teacher" or "teacher educator."

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The global integrated framework of sustainable development goals (UNESCO, 2015) emphasizes the focus on teachers as the most important change agents in society. Teachers shape education for students and cause both change and innovation in educational practices (Kasule et al., 2016). Teacher preparation, therefore, has become the most important and recognized means of preparing change agents, because success of any educational reform depends on the teachers' awareness of the innovations, their acceptability and how they adapt to the reforms in the daily operations (Almughyiri, 2021; Pitsoe & Maila, 2012; Roustaee et al., 2014; Snoek et al., 2010; Talbert-Johnson, 2006).

Currently, the most prevalent need in education systems is a teacher preparation programme that offers opportunities of constructivist teaching experiences for students to enable them to gain pedagogical content, skills and professionalism (Kablan & Kaya, 2014). According to Agrawal (2017), Dorit (2016), Ratna and Bahunlang (2015), the constructivist approach to teaching has taken a leading theoretical position, and is considered the best approach for the 21st Century. Constructivist teaching connotes a pedagogical approach that focuses on the role of the student in an active learning process. Constructivist- informed teaching takes care of constructivists' principles, practices, and environment and teachers' roles within the teaching-learning process (Kibui, 2012; Palmer, 2007; Peizhen, 2017). It promotes active learning, students' engagement, tapping and using their prior knowledge with an aim of enabling self- knowledge construction.

Constructivist teaching can spur education systems to realise the global aspiration and is, potentially, a powerful way to rethink teacher preparation. It influences students' views more

than the conventional teacher preparation where tutors teach knowledge as separate from practice, and view students as passive recipients of knowledge (Chiwimbiso et al., 2017; Dangel, 2011). The constructivist approach requires widespread change in teaching-learning approaches, certain ideas and practices (Ssempala, 2011) that are adapted to different contexts (Jordan et al., 2008). Constructivist teaching requires the educators to develop innovative ways of using technology to enhance the learning environment, and to encourage technological literacy, as well as knowledge deepening and construction amongst students (Bananno, 2015).

Constructivists' teaching principles are grounded in the philosophy of constructivism which evolved from dissatisfaction with traditional Western theories of knowledge and it became a paradigm with big ideas in education with enormous implications of how teachers teach and learn to teach (Kim, 2005; Olusegun, 2015; Yilmaz, 2008). In the constructivism philosophical paradigm, students are expected to construct their own meaning and knowledge of the world through exposure and reflection on those things they experience (Adom *et al.*, 2016; Kalender, 2007). The 21st Century education requires students to generate knowledge rather than being passive recipients of information delivered by their teachers (Ssempala, 2011) and it is through constructivist teaching that students are enabled to generate knowledge.

Postmodernism opposes the enlightenment claims to reason, objectivity and universality. It is on that background that Thomas Kuhn (1962) popularized the concept of paradigmatic shift (Shisanya, 2019). The idea of objective knowledge contrasts with the constructivists' views on matters of truth and reality. Constructivists are of a view that even Science cannot be a solution to every problem since human beings are not objects to be manipulated. Another view is that the world cannot have a single and absolute reality (Maxwell, 2017; Michelle, 2018). Khun believed that when paradigms change, the world itself changes with them. There

are four common research paradigms used in research namely: positivism, critical-postmodernism, pragmatism and constructivism or the interpretivists' paradigm which has been heavily influenced by hermeneutics and phenomenology (Shisanya, 2019).

The constructivists have a different perspective on the source of knowledge, truth and reality (Zeichner, 2010). Just like sophists, they believe in self-knowledge construction, as well as possibilities of multiple interpretations and realities. No single narrative based on a specific source should be taught as the foundation of ideas, beliefs and values. Instead, a variety of narratives should be used for the students to identify the plurality of voices from those in power and those who are marginalized (Imiere, 2021; Jordan et al., 2008; Lynch &Smith, 2011; William, 2008). Through this approach, students are able to recognise the different constructions of reason and knowledge in specific historical contexts and learn to reflect on, reinterpret, reformulate and construct their own identities and histories as they unfold multiple realities and truth.

Sustainable Development Goal 4 (SDG 4) aspires for an inclusive and equitable quality education that offers lifelong learning opportunities for all by 2030 (UNESCO, 2015). Dorit (2016) and Istance and Paniagua (2019) on lifelong learning specify wide-ranging changes in the organization of education and teaching which calls for deep innovation. It is worth noting that learning to teach is a lifelong process which makes it imperative for student teachers to be equipped with sufficient knowledge, skill, and awareness during teacher preparation in order to carry out their job professionally (Watuulo, 2011). Without effective teacher preparation, the SDG4 cannot be achieved.

UNESCO (2015) and Williams, et al. (2012) expound on the SDG 4 by emphasizing the interplay of four dimensions to realise the purpose of teaching namely: meaning (enabling a broad experience), practice (opportunities for physical activity), community (fitting one in

society), and identity (developing self-esteem and concept) which are all fundamentally interconnected. Costa (2006) and Disu (2017) state that it is the responsibility of a constructivist teacher to endow students with: meaning (through connecting with their prior experience, use of reflection and enabling self- knowledge construction), practice (through application and perfect practice), identity (through esteem and self- concept building) and a community orientation (through activities that enable shared control, dialogue and a critical voice).

The constructivist process enables tutors and students to view multiple perspectives, generate new knowledge, demonstrate the knowledge, build upon prior knowledge, seek appropriate resources and share outcomes with colleagues. The tutors who are constructivists can examine their teaching methodologies, assess students' performance, and factor in strategies that can bring them the best results (Hall & Simeral, 2015; Sagor, 2011). Teachers' professional growth can also be enhanced whenever the teaching is tailored to the students' needs, especially when using of follow- through, coaching, and practice (Disu, 2017). Bachkirova, et al. (2017) state that there is a rapid growth in the practice of constructivist guided coaching in various fields, including education, which enhances both professional practice and maturity.

This study expresses an urgent need for an effective teacher preparation where theory and practice are linked effectively with a totally new progressive and innovative means of teaching to minimise the traditional and conservative approaches (Chiwimbiso et al., 2017; Pitsoe & Maila, 2012).

1.1.1 Historical Perspective

The phenomenon of constructivists' teaching and teacher preparation as a process has evolved over a long period traced from the ancient times in Greece and China (Chaligha,

2018; Qiu, 2015). There are many ancient proponents of constructivist teaching like, Budda, Heraclitus, Schopenhauer, Lao Tzu, Confucius, Socrates, Plato, Kant, Dewey, Bruner, Vico, Berkley, Hegel, Kant, Rousseau, Pestalozzi, Von Glasersfeld, Kuhn, Freud, Foucault, Derrida, Saussure and Ausubel (Adom & Akwasi, 2016; Agrawal, 2007; Cakir, 2008; Taber, 2010). Varying aspects of the constructivist teaching can be found among the works of Socrates, Plato and Aristotle. Socrates can be considered the first philosopher who had an important contribution to establishing the foundations of constructivist teaching. The Socratic teaching is the oldest and still the most powerful constructivist teaching tactic for fostering critical thinking (Imiere, 2021; Tracey & Morrow, 2012).

The goals of teacher preparation emerged from the cognitive constructivist school (Bruner, 1961, 1996) with the idea that people learn by actively constructing new knowledge, rather than by passively receiving information provided by external sources (Michelle, 2011). Bruner is a prominent figure in education who developed the constructivists' theory based on the Socratic approach of teaching which puts emphasis on dialogue and enlightenment through reflection. Freire, too, was one of the intellectuals and critical constructivists of the 20th Century (Freire, 1970; Tarlau, 2013). He was concerned with humanization through the process of education and believed that knowledge becomes complete when what is learnt is critically appropriated in one's life rather than through rote memorization of the content (banking method).

In the period 1906-1956, the traditional perspective of teacher preparation programme was 'teacher training' which entails providing students with a range of strategies and tactics to enable them to perform well in a given activity (Meena, 2009). This kind of teacher education is named Technocratic Rationality, as it was concerned with the technical application of educational knowledge. Technical Rationality Model is common in many parts of the world whereby student teachers receive knowledge of their disciplines and of pedagogy through the

same mode of transmission they, then, use in their classrooms (Maandag et al., 2007; Meena, 2009). From this perspective, the student teacher was viewed as a passive recipient to be certified as competent in an established tradition of thought and practice.

Ssempala's (2011) study on teacher preparation and instructional methods affirms that constructivists' approaches were very effective and relevant in enabling pre-service students to construct their own knowledge. Currently, international research is building a stronger knowledge base about the nature of effective teaching and, thus, a basis for planning teacher preparation and professional growth programmes, as well as for evaluating and recognising professional competence. A list of standards or competences required for certification has been established and found in many countries, for instance; England, France, Germany and Sweden (Maandag et al., 2007; Meena, 2009).

Teacher preparation has been at the centre of educational reform in the United States of America and Canada for many years (Ntim, 2017; Thompson, 2015). There is a growing interest in coaching, mentoring and peer-networking as a new strategy for professional growth and development. In the United Kingdom and United States of America, provision of coaching has become predominant at higher levels of education (Bachkirova, et al, 2017; Fillery-Travis & Collins, 2017; Gray, et al, 2016). There is an emphasis of teachers learning from each other (Darling-Hammond, 2006; Qi, 2012; Rhodes & Beneicke, 2002) because teachers learn best by studying, doing, reflecting and by collaborating with other teachers. They also learn by looking closely at students and their work and by sharing what they see. Coaching plays a key role in Continuous Professional Developments (CPD's) implementation (Smith & Lynch, 2014).

There are many countries that have adopted constructivist teaching in their education systems, for example, the National Curriculum Framework (NCF) 2005 of India, prepared by

the National Council of Educational Research and Training (NCERT), proposed constructivist approaches in the Indian classrooms where students were expected to construct their own knowledge (Agrawal, 2007).

Teachers across Sub Saharan Africa (SSA) have neither been appropriately prepared nor well supported (Baiyelo & Oke 2015; Buckler et al., 2019; O'Sullivan, 2010) which concern has opened fresh policy aspirations with a demand for intervention and a new outlook on approaches to teaching (Ministry of Education [MoE], 2012, [MGE], 2013) in an effort to seek a better education for children. There are many forces that have influenced the shift toward learner-centered pedagogy in many Sub-Saharan African countries with a pedagogical renewal that has included many attempts to minimise teacher-dominated instructional practices.

Ethiopia, Mali, and Tanzania have instituted policies specifying that teachers should use pedagogical approaches that engage students and make learning more interactive. National curricula in Botswana, Ghana, Kenya, Senegal, and a growing number of other African countries seek to promote such skills as analysis, creativity, critical thinking, and problem solving (Ntim, 2017). Ghana, like other nations, needed a contemporary professional teacher, who facilitates and helps students/pupils to create knowledge, to be critical thinkers, analytical and, above all problem solvers, and therefore, opted for constructivist teaching in their teacher preparation.

In Uganda, the teachers had been noted to be neither innovative nor creative and rarely used learner centered methods in the classrooms, which made students to focus on only what was to make them pass examinations (Malunda, 2017; National Curriculum Development Centre [NCDC], 2020; Olema et al., 2021). Kyambogo University has endeavored to apply

constructivism in its teacher education curriculum by including competences that require students to be actively engaged.

In one of the recent developments in relation to National Teacher Policy (MoES, 2019), the Uganda National Institute of Teacher Education (UNITE) is taking a constructivist approach and has neatly defined the proportions of students' engagement, practice and anticipated output with an improved way of carrying out assessment. However, several changes in teacher education are always hindered by the traditional systems of teacher preparation (Namamba, 2017). This is evident with the low pace of change for several reviews in Uganda in the previous years, that include PTC curriculum review, innovations like the Certificate in Teacher Education Proficiency (C-TEP), KYU Bachelor of Teacher Education (BTE) course as an effort to improve teacher education (Kagoda & Ezati, 2013, MoES, 2007).

1.1.2 Theoretical Perspective

Constructivism has progressively expanded its dominion from just being a theory of learning to becoming a theory of teaching, a theory of education, a theory of the origin of ideas, and a theory of both personal knowledge and scientific knowledge (Chabra et al., 2013). Though the Constructivist Theory seems to be focused on learning, it is the constructivist- informed teacher who structures what to learn and is the one who enables the constructivist learning environment (Kellough. & Carjuzaa, 2009; Kibui, 2012; Maani, 2013). It is on that basis that the phrase Constructivist- Informed Teaching was derived.

Constructivist- Informed Teaching is based on the Constructivist Learning Theory (CLT) which states that all knowledge is constructed from a base of prior knowledge. According to Mugambi (2018) constructivists believe that learners construct their own meaning through active engagement and by constructing their own representation of what they know. The Constructivist Learning Theory has a set of prescriptions that challenge the transmission or

behaviourist paradigms advocated in many education programmmes (Yilmaz, 2008) with a view that learners are not blank slates and, therefore, knowledge cannot be imparted without them making sense of it (Babu & Santhosi, 2014; Kibui, 2012; Liu & Chen, 2010; Tonya, 2016).

Bruner's Constructivist Learning Theory is adopted for this study which states that learning is an active process (Bruner, 1960), whereby students learn best by constructing new ideas and building new schemas based upon current and past knowledge (Kibui, 2012; Kim, 2005). The Constructivists' Learning Theory has a direct application to education, particularly, on the teaching and learning. The constructivists' view of teaching considers the student as an active agent in both the meaning making process and knowledge acquisition. The Constructivist Learning Theory affirms that knowledge exists within the human mind, and, therefore, does not have to match any real world reality (Olusegun, 2015). The learners will often try to interpret knowledge based on their background, culture and previous experience as a personal mental impression of the real world (illustrated in the story "Fish is Fish" in Appendix 11). As the learners encounter new experience, they always update their own mental impressions by reflecting on the new information so as to derive their own interpretation of reality (Kibui, 2012).

It was imperative to use the Constructivists Learning Theory from the teaching perspective which for long has not attracted many scholars (Zainuddin & Ahmed, 2008). This theory is relevant in contemporary education because it suggests several changes in the teachers' roles, advocates for learner-centeredness, students engagement and interactive pedagogical approaches that enable meaning making backed by the belief that knowledge is actively constructed by the students, not to passively receive it from the outside (Chabra et al., 2013; Zainuddin & Ahmed, 2008). According to Hyson et al. (2009) in their study, tutors' support

enables the student teachers to retain information provided through constructive feedback, which later translates into improved teaching.

The constructive feedback is indirect in nature and a form of coaching without coercion or formalities, which brings about mutual understanding and respect. Effective constructivist-guided coaching takes a collaborative approach between the student teacher and the tutors (Darling-Hammond, Wei et al., 2009).

The Constructivists Learning Theory is applicable to the selected teacher preparation components, specifically, the teaching, supervision and guidance of students during the non-classroom based activities. Unlike the many constructivists' researches, this study began with a theory along with its relevant instructional constructs. The theory may appear at the beginning and be modified or adjusted based on participant views in a qualitative study (Adom et al., 2016; Creswell, 2013; Creswell & Creswell, 2018).

1.1.3 Conceptual Perspective

The main concepts for this study are constructivist- informed teaching and teacher-preparation. Constructivist- Informed Teaching in this study refers to an instruction that is typically learner centred within a teaching – learning situation characterised by prior knowledge, cognitive dissonance, application, feedback, reflection, shared knowledge among teachers and students, shared authority and responsibility among teachers and students, as well as the teacher's take on a new role as guides in instruction. These components or domains are necessary for a lesson to be considered constructivist (Kibui, 2012; Panomporn, 2004; Peizhen, 2016; Santoyo, 2016). Integrating these constructivist's domains is possible within a constructivist learning environment that is characterised by five constructs namely; personal relevance, uncertainty, critical voice, shared control, and student negotiation (Hartle et al., 2012).

Constructivist- informed teaching in this study refers to an instructional process where a teacher observes the tenets and principles of constructivists teaching when handling both classroom and non- classroom based activities with an aim of inducing students to construct knowledge. Constructivist-Informed Teaching is characterised by the teacher's deliberate effort to initiate learner- centred engagement, inquiry and knowledge construction (Palmer, 2005) within an appropriate conducive learning environment. According to Ratna, et al. (2015), teaching is shifting from a one-way instruction to enable students to construct and discover knowledge, rather than giving it to them through direct instruction.

The constructivists propose radical changes in the teaching and learning environment, as well as emphasize situated learning, which is contextual with tasks or activities that enable students to contextualize the information. The students have to be taught in a relaxed context without any pressure, using their prior experiences and ideas acquired from different sources, solving real-life problems through research and inquiry, continuing to teach from outside the classroom, and to ensure that students are responsible for their own learning, an approach which has a positive influence on students' knowledge construction (Ayaz & Şekerci, 2015).

Constructivist teaching principles are also applicable to ICT related pedagogy, particularly, on aspects of inquiry, engagement and creativity. Already the world has been compelled to witness a rapid digitalization of education due to the intense pressure on traditional teaching (European Union, 2013; Saljo, 2010; Tusiime et al., 2019). Integration of digital technology in education, guided by constructivists' principles has great potential to improve the quality of education (Chai et al., 2013; Hasniza et al., 2013; Toit, 2015; Tusiime et al., 2019). Online educators and theorists identified online learning as a socially constructivist experience (Stewart et al., 2009) with an open space that promotes student dialogue, collaboration and problem-solving activities (Habler et al., 2016). Constructivist teaching approach has become popular, especially, with the blended, e-learning and m- learning (mobile learning) which

have taken over the traditional teaching methods because of the interactive environment which is supported by a broad range of hardware and software used in conjunction with non-digital tools and resources. It embraces the integration and use of Information and Communication Technology (ICT) and Computer Aided Learning (CAL) which enhance self-learning and knowledge building.

Teacher preparation is a broad and compound concept with a series of practices intended to humanize education. Teacher preparation involves both classroom and non- classroom based activities (time tabled and non- time tabled activities) which cannot be covered in one study (Michelle, 2018). Teacher preparation is a broad context describing a pool of assorted and well-structured activities planned in the making of an accomplished, competent, professional and holistic teacher. Teacher preparation in this study was limited to activities where the students were being taught in the classroom, supervised while on School Practice and the tutors' coaching during the non - classroom based activities within the college premises. These three areas were selected as contexts in which application of constructivists' principles would be easily manifested. A combination of teaching skills, pedagogical theory and professional skills in teacher preparation can serve to create the right knowledge, attitudes and skills in students, as well as enabling a holistic development (Kablan & Kaya, 2014).

The study took interest in the ignored hidden curriculum when students are outside the classroom and when not on School Practice (non- classroom based activities). It was necessary to explore the management of activities at colleges, such as co-curricular, assemblies, weekly duty and management, scripture union, cultural and professional clubs and on how tutors use constructivist – guided interaction (coaching) with students which enable them to develop both personality and moral attributes expected of a professional teacher. Constructivist Informed teaching is also used in non- classroom based activities where tutors challenge students on what to do or how to behave instead of using the

moralisation approach of “telling or dictating what a student should do.” A tutor is expected to serve as a coach, mentor, planner and an assessor in effort to prepare and produce a competent and holistic teacher.

Crawford (2016) and Whitmore (2009) postulate that coaching is a productive strategy because of its supportive relationship and manner of communication. According to Smith and Lynch (2014), effective coaching behaviours include creating a learning environment, caring and supporting staff, providing feedback, communicating, and providing resources, including other people. Tutors can most effectively coach students through reflective practice which has many principles associated to it, as opposed to patronizing, indoctrination and any other hostile approach.

Overall, teacher preparation requires a comprehensive pedagogy from teacher educators. Teacher education curricula should also be inclusive and emphasize lifelong learning, development in technology and its applications as well as strategies for planning viable alternatives to benefit student (Banerjee, 2013; Boyd, 2015). This is supported by Winterhalder (2017) and Harris and Hofer (2011) whose studies reveal that integration of ICT transforms the tutor from an authority to a facilitator and, in such contexts, students, too, get transformed from passive recipients of knowledge to active participants in the knowledge construction.

1.1.4 Contextual Perspective

Relevant curricula and preparation of quality teachers are the most frequent reported issues by the researchers (Hinduja, 2021; MoES, 2014). Kyomuhendo and Kasule (2017) and Otaala, et al, (2013) express concern on the deteriorating quality of primary education in many developing countries in Sub Saharan Africa (SSA) where teacher preparation is considered to be one of the main causes of the poor quality of education in primary education.

The inadequacy of teacher preparation for the authentic everyday life and practice in schools has generated pressures to rethink both the structure and the practices of teacher education (Baiyelo & Oke 2015; Buckler, Stutchbury et al, 2019; Kasuule et al., 2016; O'Sullivan, 2010; Rajput, 2012).

Teacher quality is a global issue and a task for many education systems. Without good teachers (teacher educators inclusive), SDG4 cannot be achieved and will ultimately, affect other SDG's.The effort of C-TEP in Uganda did not support pedagogic change that was being promoted (Buckler et al., 2019; Kyeyune, 2011; O'Sullivan, 2010) and even the anticipated benefits, like quality, reflective practice and the lifelong learning, were not realised.

The current demand for better teacher preparation is the opportunity of constructivist teaching experiences to be tried out on pre-service teachers (Chabra et al., 2013; Dorit, 2016; Kablan & Kaya, 2014; Roustaee et al., 2014). However, tutors at PTCs often find it difficult to teach in a constructivist, dialogical manner because of the overloaded curriculum, as well as devalue of the proposed constructivist teaching, especially, in a competitive examination system.

The student-centred methods are emphasized, but very many tutors in PTCs do not use them (Kagoda & Ezati, 2013; Korthagen et al., 2006; Maani, 2013; MoES, 2007; Malunda, 2017; MoES, 2014; Olema et al., 2020; UNESCO 2014; Zeichner, 2010). In 2003, MoES, in conjunction with KYU, started ranking PTCs in relation to performance in Grade III final examination with the assumption that this would enhance both tutors' and students' effort to work hard. Although this assumption was logical, it created new pedagogical problems, such as the shift from competence based preparation to helping students pass examinations. The ranking of PTCs has infected the colleges in South Eastern Uganda diverting the focus of proper teacher preparation to just helping students to pass examinations.

Uwezo Report (2016) on attainment of learning outcomes articulates pupils' weakness which indirectly implicates teachers' inability to enable pupils to unfold their potential. South Eastern Uganda has always had many of its districts ranked among the twenty worst performing districts, which relates to what is entailed in the MoES (2014) TIISA report, UNEB (2015) National Assessment of Progress in Education (NAPE) and Uwezo (2019). These reports highlight serious and critical issues that project shortcomings in the instructional process in Primary Teachers' Colleges.

Taneri (2010) admits that it is possible that teachers lack training in line with a constructivist approach, while Brown (2012) explains why students in colleges have difficulty in connecting theory to practice. Most tutors in Teacher Training Institutions come from Kyambogo University where lecturing and other traditional approaches of teaching and learning are dominant during the teaching and learning sessions (Otaala et al., 2013). This kind of modelling ripples to the practices in colleges and, consequently, causing students preparation questionable. Several tutors are not acquainted with primary education content, particularly, the secondary school teachers recruited in TTIs who cannot demonstrate, coach, mentor, or model students due to their weak teacher education orientation (Kagoda& Ezati, 2013; MoES, 2014). The students too, join TTIs with weak grades and many of these are not able to speak and write good English (Khisa & Lanyero, 2009).

Redecker and Johannessen (2013) suggest the re- organisation of teaching and assessment strategies in colleges as a way to enhance the 21st Century skills amongst students which requires developing their creativity, problem- solving, reflection, critical thinking and inquiry, and learning to learn in a collaborative social environment. Saleh (2019) states that the 21st Century is for digital literacies, technological advancement, multicultural societies, human mobility, global communication, social networking, innovations, creativity and inclusiveness.

However, colleges in South Eastern Uganda have not given appropriate attention to how student teachers are taught and prepared for their professional career in terms of values, attitudes, skills and knowledge about the reforms, instructional shifts and how to integrate the 21st Century skills into classroom pedagogy.

The COVID-19 pandemic outbreak and lockdowns have partially led to sudden shifts in instruction from the traditional classroom to the virtual classroom which has also caused several challenges (Kimmel et al., 2020; Korkmaz & Toraman, 2020; Yucesoy-Ozkan et al., 2020). Distance Education and digital learning platforms have become crucial parts of life as the best way to ensure learning continuity during COVID-19 (Moreno & Gortazar, 2020; Ozer & Ustun, 2020; Kado et al., 2020). However, many tutors and students in Uganda still find the use of multimedia and ICT integration as a mystery (Nakintu & Neema-Abooki, 2015). The TTIs have computer rooms which are not effectively used due to a low digital acquaintance.

Ficke (2020) and Ssempala (2011) emphasize that constructivist approach to teaching and learning should be carried over into the realm of Teacher Education. However, there is a concern that some constructivists practices and methods that are used to prepare students, such as micro- teaching, peer teaching, team teaching, reflective practice, CPD's, and child study, are neglected or given little time, which affects students' confidence during School Practice (Ezati & Kagoda, 2013; MoES, 2007; Moon, 2004; Okonye, 2007; Smith, 2015).

Tutors use the traditional supervisory process which is authoritarian with minimal collaboration and highly contrasting with the desired clinical supervision which is constructivist. The constructivists' practices in supervision entail indirectness, planning with students, allowing students to reflect on their performance to point out concerns, agreement on selected concerns to handle, conferencing and giving a non-authoritarian feedback.

Enabling the desired constructivist learning environments can only be possible when teachers are properly prepared with constructivist approaches (MoES, 2014; UNESCO, 2015).

Although the non-classroom based activities are complementary to both the theoretical and practical preparation of teachers, where constructive –guided coaching as a strategy is very effective in enabling students' professional growth, the pre-service colleges in South Eastern Uganda are mostly focused on what to do inside the classroom, neglecting the social development of the student teacher, which affects the practical and professional preparation of the student teacher (Boyd, 2015; MoES, 2007; Smith, 2010; Ssemuwemba, 2017; Whitmore, 2009).

1.2 Statement of the Problem

Using constructivists' approaches in Teacher Training Institutions to teach, supervise and manage non- classroom based activities, the likelihood of getting effective and holistic teachers increases, especially, when the students are exposed to learner- centred methods that enable them to generate ideas and construct their own knowledge (Kibui, 2012; Korthagen et al, 2006; Ssempala, 2011; Taber, 2011; Winterhalder, 2017). The constructivists' approach encourages the use of learner- centered methods, along with several social inquiry instructional techniques. Constructivists suggest several changes in the classroom culture, attitudes, beliefs, tutors' roles and practices where teachers value the students' experience and voice (Gupta, 2011; Kaushik, 2018).

However, the TTIs are facing a challenge of preparing quality teachers confronted by a prevalent gap between theory and practice as many students from college cannot readily translate what they are told into practice (Chiwimbiso et al., 2017; Korthagen et al., 2006; Ssegantebuka et al., 2021). The tutors tend to be strict and authoritarian treating students as mere objects that just take in what they are taught without opportunities for independent or inquiry-based learning, which has kept suppressing students' intellectual unfolding,

classroom practice and professionalism (Arnett &Freeburg, 2018; Brown, 2012; Maani, 2013; Saleh, 2019; Valerie et al., 2013). This mindset has perpetuated the traditional transmission model while hindering the use of constructivist approaches (Darling-Hammond, 2006; Kablan &Kaya, 2014; Lin, 2013; Mbugua, 2011; Wang, 2016; Zeichner, 2010).

The literature expresses the fact that tutors contradict themselves by teaching about learner-centred methods when using the methods that promote regurgitation of content due to the emphasis put on passing national examinations (Aguti, 2010; Maani, 2013; MoES; 2014; Otaala et al., 2013; Watuulo, 2011). The primary school teachers, too, use more of the teacher- centred methods (NPA, 2018), which implies that there exists a gap between training and practice. In order to achieve quality and effective pre-service teacher preparation, teacher education should be anchored on theories that offer tutors and their students with an opportunity to construct knowledge through social interaction, communication, inquiry learning, and respect for the environment (Ssegantebuka, et al., 2021).

This study on Constructivist Informed Teaching in teacher preparation can result into powerful learning in schools, since it enables teachers and tutors to use constructivist approaches while teaching (Byran et al., 2009). It is necessary to break the circle of traditionally trained teachers by implementing new and effective approaches to prepare students where theory and practice are linked effectively (Korthagen et al., 2006; MoES, 2007). Unless constructivist informed teaching is conceptualized and implemented in Teacher Training Institutions, low teacher competence and performance will continue and lead to, ultimately, poor quality of education at all levels, because primary education is the foundation of the whole education system.

1.3 Purpose

The study analysed the implementation of Constructivist Informed Teaching at colleges with the intent of suggesting effective ways that enhance teaching, supervision and professional growth of students at Teacher Training Institutions in South Eastern Uganda.

1.4 Research Questions

The study was guided by three research questions, each with fore- shadowed questions as follows:

1. What constructivists' principles inform the teaching of students in Teacher Training Institution classrooms in South Eastern Uganda?

    a) What beliefs do tutors have on Constructivist Informed Teaching?

    b) What constructivists' principles are used to teach students in Teacher Training Institutions of South Eastern Uganda?

    c) How does the implementation of Constructivist Informed Teaching differ from theory?

2. What ways do constructivists' practices inform School Practice supervisory processes in Teacher Training Institutions in South Eastern Uganda?

    a) What beliefs do tutors have on clinical supervision?

    b) What constructivists' practices are used in supervision of students in Teacher Training Institutions of South Eastern Uganda?

    c) How does the tutor's supervisory behaviour differ from theory?

3. How is constructivist- guided coaching incorporated within the non- classroom based activities to enable students' professional growth at Teacher Training Institutions in South Eastern Uganda?

    a) What beliefs do tutors have on constructivist -guided coaching?

b) How is constructivist- guided coaching implemented in non-classroom based activities in Teacher Training Institutions of South Eastern Uganda?

c) How does the management of non-classroom based activities differ from theory?

1.5 Significance of the Study

The findings of the study can be useful to the following;

The Government will realise a quality education which is also the foundation to improving people's lives. Constructivist Informed Teaching in TTIs will address the underlying causes of the deteriorating quality of education in all institutions through a well-educated, skilled and innovative labour force.

The Ministry of Education, Science and Technology, through its departments (TEDT, UNITE and Kyambogo University), will design a relevant PTE curriculum for TTIs and BTE to incorporate constructivist pedagogy with appropriate instructional and professional activities that determine an accomplished teacher.

The principals of teachers' colleges will have a fresh outlook on the various teacher preparation activities and will be empowered to motivate staff and students as a way of fostering constructivists' approaches that enhance both students' academic and professional freedom.

Constructivist Informed Teaching at colleges will broaden tutors' perspective of teacher preparation and will expose to them ways of implementing constructivist's principles which are highly desired in this 21st Century. It is assumed that when constructivists' principles and practices are used, higher quality teaching and learning in pre-service Teacher Education Programme will translate into improved teaching practices in schools.

The students in TTIs will benefit from this study, since they are at the receiving end of the approaches used by the tutors. The awareness of the effect of constructivist teaching on their

performance will change their paradigm in teaching and may be in position to apply constructivists' approaches when teaching in primary schools, as well as to regularly reflect on their teaching styles.

1.6 Limitations of the Study

The researcher had anticipated that respondents would not cooperate; so, these were handled very carefully. Ensuring Constructivist- Informed Teaching and its implementation required skills, consistent monitoring, multiple interviews to realise data saturation, follow- ups and maintenance of diaries to capture data on tutors' performance and progress of students.

Time was a big constraint as the traits under study took time to unfold and demanded careful handling to realise the anticipated outcomes. The researcher engaged research assistants in the study and had to schedule a neatly woven programme that enabled observation and involvement so as to pursue the study as scheduled.

1.7 Delimitations of the Study

The research was conducted in three colleges namely Jinja PTC, Kaliro PTC, and Bishop Willis Core PTC, all located in the South Eastern Uganda and may not be generalised to all students and tutors of Uganda.

The study sample comprised of Year Two students, tutors and School Practice Coordinators in Government Aided colleges to obtain data, while the private TTIs were not considered for this study. The contexts in private TTIs is less ideal for teacher preparation, when compared to Government Aided TTIs due to low student population and, therefore, relatively low funding which would call for a difficult study.

Though there are many dimensions on teacher preparation, this study was confined to three aspects, namely, teaching students in colleges, School Practice and coaching for professional growth.

The study was confined to a period since the current PTE Curriculum Review (2012) and focused mainly on classroom and non-classroom based activities.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Teacher Preparation involves very many activities, but based on the objectives and scope of this study, three aspects namely; TTI Classroom Based Teaching, School Practice and coaching viewed through the constructivist philosophical lens, have been selected to form the structure of this chapter using the following sub-headings: Theoretical Overview, Principles of Constructivist- Informed Teaching, School Practice and Supervision, Coaching and Students' Professional Growth.

2.1 Theoretical Overview

This study is informed by Bruner's Constructivist Learning Theory which postulates that learning is an active process in which learners construct new ideas or concepts based upon their past and current knowledge (Bruner, 1966). The driving concept behind Constructivist Learning Theory is that students learn through active engagement, based on connecting new material to old material (Mercer, 2020). This belief is supported by Piaget (1958) and Vygotsky (1978) among the founding constructivist theorists who affirm that experience is formed as a result of one's active participation in response to external stimuli (Disu, 2017).

First and foremost, the Constructivist Learning Theory has attracted scholars' attention in education. Constructivist Theory perspectives on learning have given rise to a number of models of constructivist classroom teaching (Palmer, 2005; Roustaee et al., 2014; Schunk, 2008). Chabra et al. (2013).In tandem, Taber (2011) studies further to clarify that constructivism is undoubtedly, main theoretical influence in contemporary teaching-learning practices. These studies observe that constructivism has progressively expanded its dominion

from a theory of learning to becoming a theory of teaching, a theory of education, a theory of the origin of ideas, and a theory of both personal knowledge and scientific knowledge.

Secondly, Bruner's Constructivist Learning Theory is comprehensive, since it embraces the views of several scholars and tenets of other constructivist theories, such as active learning, inquiry and reflective practice. Dewey (1933, 1938) and Schon (1983, 1987), expressed a belief that reflective practice is based on active and critical inquiry of one's experience with problem solving. Schon (1983, 1987) defined reflective practice as an intuitive process of knowing in action enacted by skilled professionals. Historically, philosophers, such as Socrates, Plato, and Aristotle viewed reflection as contemplative rather than passive thoughts toward action. Teachers' use of reflective teaching practice can enable them to build upon prior knowledge, seek appropriate resources, and develop new strategies to improve on their work. The constructivist process of reflection influences what a teacher perceives, feels, sees, and learns (Disu, 2017). Bruner's theory is in consonance with Fraires' urge to humanize education by appropriating knowledge to one's life rather than imparting and forcing rote memorization of the content (Freire, 1970; Tarlau, 2013).

Thirdly, the constructivist approach to the teaching-learning process has been considered as the best form of approach for 21st Century classrooms (Ratna & Bahunlang, 2015, Ssempala, 2011). Yadav and Kesherwani (2017) in their study affirm that the constructivist approach has become popular in contemporary education, because it respects each student as a unique individual and accepts their role as knowledge constructors. In this regard, the global perspective of teacher-preparation is shifting from a traditional mechanistic world-view (modernist and behaviourist approach) to a holistic world-view (constructivist and situational or contextual approach) with the aim of fostering self-knowledge construction.

Furthermore, constructivists' views oppose objectivism with an argument that there is no single valid methodology for doing anything. A study by Mensah (2015) concurs that the proponents of constructivism share the view of the existence of the real world. Constructivists argue that learners cannot fully understand the real world in a single way, but in multiple ways. This concurs with Amparo (2013) and Shisanya (2019) whose studies reveal that constructivists' assume that realities are multiple, constructed, and holistic; and that the relationship of the knower and the known are interactive and inseparable. Consistent with this claim, constructivists emphasize that classroom experiences should encourage multiple perspectives. The post- positivists have adjusted research to allow more than one possible truth, whereby knowledge is not objective.

On the contrary, the behaviourists focus on the overt behaviour which can be both observed and measured. They treat the mind of a learner as a 'black box' where responses to a stimulus can be observed quantitatively without any imagination of what occurs in the mind. Behaviourists regard students to be blank slates whose behaviour has to be moulded by reinforcement (Shisanya, 2019).

Finally, constructivism holds the belief that a human being constructs own knowledge from the world around them (Hyslop-Margison, 2008; Schunk, 2008; Winterhalder, 2017). The Constructivism Theory emphasizes individual learning and rejects the traditional notion of transmitting knowledge from teacher to student (Kibui, 2012). These studies suggest several instructional techniques and strategies that encourage students to construct their own concepts and to own ideas.

2.2 Principles of Constructivist- Informed Teaching

The principles of constructivist teaching are derived from the works of different scholars which and are used to distinguish it from the traditional teaching. Activating prior knowledge

along with its elements, such as inquiry, integration, collaboration, reflection and ICT integration, distinguishes constructivist teaching from the traditional approaches (Kibui, 2012; Peizhen, 2016). The traditional teaching approaches invade culture, destroy the identity of persons by implanting a static view of the world, and dehumanize education by treating students as mere objects without any option except taking in what teachers choose and decide for them (Arnett &Freeburg, 2018).

In a study on the use of constructivists' approaches, Maani (2013) described the traditional teacher as a 'narrating subject' who instructs and fills the minds of the students who are treated as mere 'listening objects.' Gupta (2011) and Valerie et al., (2013) in their studies concur that traditional teaching, where the instructor just lectures as students simply listen and write (banking), cannot be effective because it makes learners to read the word and not the world and its challenges. The traditional approaches tend to place man away from the world as if he exists all alone. The traditional practice does not cater for the learners' interests and, instead, teachers choose what to teach, set standards and ensure that learners just treat what they are told as the sole truth. In that manner, students are never critical and wait for a future they do not know. Much as these studies imply that knowledge can become complete when what is learnt is critically appropriated in one's life rather than rote memorization of the content, they do not give specific strategies and what teachers must do to realise this aspiration.

2.2.1 Tutors' Beliefs on Constructivist- Informed Teaching

Several researchers affirm that teacher beliefs determine their selection of instructional practices and the students' outcomes. Teachers' beliefs are important constructs with regard to instructional practices (Putthachat, 2015). In this regard, the constructivist instructional beliefs have become more dominant in schools and Teacher Education Programmes. Past studies on beliefs about teaching and learning put teachers' beliefs in two main categories:

learner-centered and teacher-centred beliefs (Yesilyurt, 2022). Learner-centred (progressive model) beliefs relate to teaching approaches that focus on promoting learning environments in which students can take an active role and construct their own knowledge, while teacher-centred (traditional model) beliefs are typically associated with teaching approaches that focus on the transmission of subject knowledge from teachers to students.

Constructivist- Informed Teaching is perceived as a student-centred teaching that integrates principles or domains, such as prior knowledge, cognitive dissonance, application, feedback, and reflection, which are considered constructivist basics (Baviskar et al., 2009; Bruning et al., 2011; Hartle et al., 2012; Kibui, 2012). In executing the mentioned constructivists components or domains, Peizhen (2016) and Panomporn (2004) in their studies clarified on the appropriate constructivist teaching and learning environment based on the components in the Constructivist Learning Environment Survey (CLES) tool which defines and specifies five constructs that manifest a constructivist approach, namely: personal relevance, uncertainty, critical voice, shared control, and student negotiation. However, several studies observe that constructivists share four characteristics significant in the teaching process namely; use prior knowledge to construct new knowledge, negotiation through co-operate learning, reflection and authenticity (Loyens et al., 2007).

The basic element of constructivist teaching is dialogic knowledge transmission, which enables it to produce deeper understanding and better internalisation (Ivone et al., 2020). Tutors know and have a positive attitude towards constructivist approaches to teaching and learning, but due to other factors, such as the overloaded curriculum, limited time, examination pressures, large classes, and lack of morale, they end up using teacher centred methods, because these are less demanding to use.

In light of the above, the current approaches for teaching call for adaptation of teachers' beliefs about teaching and learning to align their instructional practices with the constructivist

philosophy underpinning the standards (Yesilyurt, 2022). However, teachers are sometimes not aware of their own beliefs and neither have the language to explain and categorise their beliefs. Secondly, most of these studies present characteristics to establish and distinguish constructivist teaching from traditional teaching in only a quantitative manner, which gap this study wishes to reverse by exploring the same themes in a qualitative manner.

2.2.2 Constructivist Teaching Principles

The constructivist teaching principles include prior knowledge and authenticity to construct new knowledge, engagement through active learning and ICT integration, negotiation through a collaborative and cooperative learning, reflection, as well as multiple modes of assessment.

2.2.2.1 Prior Knowledge

Constructivist teaching strategies are valid and can foster knowledge construction in an authentic and very conducive environment. The learners incorporate prior knowledge to create new knowledge structures through discovery and reconstructing information (McDonald, 2010). This is supported the fact that an individual is a function of one's prior experiences, mental structures and beliefs that are used to interpret objects or events (http://members.lycos.co.uk/jmoreea/im2141.htm). The learner needs teachers' support (scaffolding) to construct knowledge. It is a Constructivist- Informed teacher who can do this well.

Herrington, et al. (2010) and Jobling and Moni (2004) in their studies affirm that authentic learning reflects the kind of activities that people do in the real world and it requires a classroom context that is purposeful, motivational and practical. Herrington, et al. (2010) identify nine elements to be considered as guidelines for a constructivist, teaching and learning situation, namely an authentic context that reflects the way the knowledge will be used in real-life, authentic activities, access to expert performances and the modelling of processes, multiple roles and perspectives, collaborative construction of knowledge,

reflection, articulation, coaching and scaffolding as well as an authentic assessment of learning within the tasks. These studies emphasize authentic activities and clarify on the urgency of having coaches, experts and knowledgeable tutors to guide students, but they do not specify how knowledge construction or meaning – making can be elicited.

2.2.2.2 Engagement, Active Learning and ICT Integration

Peizhen (2016) and Santoyo (2016) in their studies suggest students' engagement as a more productive and effective means that fosters knowledge construction. The teachers have to incorporate multiple, engaging and flexible teaching strategies in their classrooms (Haynes, 2014; Santoyo, 2016; Panomporn, 2004). A constructivist classroom adopts a combination of the pedagogies which are: inquiry-based, collaborative, authentic, active, and reflective learning methods (Pereira & Sithole, 2019; Srivastava & Dangwal, 2017; Ssempala, 2011). These studies are supported by Yadav & Kesherwani (2017) in their study where the student-centred practices are discussed in terms of activities or practices that teachers use in the classroom, and these include small-group discussions, peer instruction, the use of technology for learning, experiments, guided discovery, and problem-based learning. The implication of these studies is that, much as teachers share information with students, knowledge construction and comprehension is solely a student's responsibility. Dorrit (2016) and Stahl (2011) argue that, although PTE teaching is claimed to have a special task to support students in adopting ways of thinking and producing new knowledge anchored in scientific inquiry practices, the students' habits of learning are still, overwhelmingly, skewed toward passive acquisition of knowledge from authority sources rather than from collaborative inquiry activities. This argument hinged on the traditional mentality that inquiry activities waste time and that even students cannot carry out the inquiry.

Constructivist- Informed Teaching can also enhance active learning, students' engagement, as well as collaboration by use of educational technology. Educational technologies allow for

active participation, collaboration and engagement (Gachago et al., 2013; Mercer, 2020). Habler et al. (2016) in their study suggest to open the pedagogic spaces to promote student dialogue, collaboration and problem-solving activities. This can be supported by a broad range of hardware and software used in conjunction with non-digital tools, and resources. The emerging technologies tools, such as wiki's and blogs, provide a powerful opportunity to increase collaboration, and enhance student engagement. Unlike the traditional teacher who uses ICT deductively, gives ready notes, and prepared video clips; the constructivist teacher uses ICT inductively. Educational technological tools have the potential to provide students who are located in resource- constrained institutions, the much needed digital literacy skills required for the 21st Century workplace. Teachers need to encourage and accept learner autonomy and initiative in a constructivist classroom. In a study by Nakintu and Neema-Abooki (2015) on Connect Ed Project in Uganda, found out that, although teachers had aspirations to use the learner-centred approach, they employed limited use of multimedia and minimally encouraged students to use ICT. The study identified obstacles towards usability of computers in PTCs, such as the inadequacy of resources and materials, which created a conspicuous mismatch in the teaching and learning process at the PTCs, a situation that needed to be rectified to meet the demands of our times.

Constructivist teaching is the most time-appropriate and updated theory of the teaching-learning process and that enables a across over to the 21st century, when compared to other approaches. According to Suheyla and Mohammad (2021) in their study, the 21st -century demands the learners to be technologically competent and self-driven to cope with technological advancement. The use of technology has become a priority for educators all over the world to improve the quality of learning and teaching (Winterhalder, 2017). Gervana (2014), in a study, explains the power of technology in teaching to the effect that it helps to transcend gaps and to build bridges to reach students with a purpose to complement teaching

and learning. In support, Mayer (2021), also in a study on the use of video recordings for teaching analysis, elaborates that if technological equipment comprised of recording devices, these can give students the chance to observe and re-observe their own performance through a process of video and audio recording, describing, analyzing, and interpreting the teaching. The student and teacher learn equally from each other. Technology can also be used to support the new social arrangements of setting up learning or teaching communities in teacher education that can be shared in diverse ways (Pereira & Sithole , 2019). Mercer (2020) in a study emphasized the need for integrating technology in education with a belief that the gadgets students interact with help to support the creation of collaborative, student-centred project based learning environments. Mercer's study concluded that technology in education promotes learning opportunities that flow naturally and the study recommended training teachers for their role in this new system. However, the study did not clarify on how the training has to be done. On improving teacher preparation in Uganda, the MoES NTP (2019) clarifies on the teachers' minimum qualification, tutors' profile and anticipated competences, of which digital fluency and ICT integration in education are pre requisites. However, Doe (2013),in another study observed that the inadequate infrastructure, an aging population of teachers' ill equipped to integrate ICTs into their practice, together with the pressure on those teachers to upgrade their skills quickly to stay ahead of their digitally capable students, creates expectations of proficiency that are unrealistic.

With the shutdown of schools in the wake of the COVID-19 pandemic, all countries had to rapidly deploy online learning models, causing an urgent need for educational infrastructure and pedagogical transformations. ICT integration in education ceased to be an option and therefore, teachers had to adapt rapidly to changing their teaching practices via online delivery with little or no help, such as in-person, hybrid, or virtual learning models. Dayna (2021) in a study on the impact of constructivist learning through authentic project-based

learning experiences, observes that innovators, sometimes, rarely focus on teacher training, leading to a slower rate of adoption of the suggested practices and innovations which, consequently has affected the pace of educational infrastructure and pedagogical transformations. The study, therefore, called for a greater focus on improvements in teacher training and teaching practice for successful innovations.

2.2.2.3 Constructivists Learning Environment

In the classrooms where constructivists' approaches are applied, learning is constructed and characterised by environments where learning activities are varied, interactive and student-centred (Vij, 2015). Pereira and Sithole (2019) in a study on the constructivist learning environment, affirm that inquiry as a method of teaching requires learners to actively engage in seeking and constructing knowledge. This observation is expounded in a study carried out by Srivastava and Dangwal, (2017) which describes the characteristics of a constructivist classroom environment as being active, authentic, collaborative, inquiry-based and reflective, where the teacher's role is to facilitate the process of seeking and finding information, as illustrated in Appendix 15. The implication of these studies is that class activities need to be structured in order to enable learners to engage in active problem- solving, inquiry, imaginative creation, interaction, and personal reflection.

Constructivist teaching demands the use of active learning methods, which involves getting learners to do things and to think about what they are doing (Ally, 2008; Amparo, 2015; Morgan et al., 2005). In such a teaching – learning situation, the teacher's role is not to spoon-feed learners, but to help them to learn by making it possible for them to build their own knowledge through acting on materials and engaging in meaningful experiences (De Araujo & Slomski, 2013).

The shift towards the Constructivist Theory of Learning has also placed added emphasis on inquiry as a learning activity. The inquiry process involves the following steps: questioning and predicting; planning and conducting the inquiry, processing and analysing data obtained; and evaluating and communicating findings (Maheshwari & Thomas, 2017; Singer & Moscovici, 2008; Sun et al., 2015; Ssempala, 2011). On inquiry, Babu (2014) and Pereira and Sithole (2019) in their studies, further, advance the 5 E's (Engage, Explore, Explain, Elaborate and Evaluate) as another instructional constructivist approach to learning, which says that learners build or construct new ideas on top of their old ideas. These studies clarify that constructivist lessons combine external processes such as peer tutoring, scaffolding, and collaboration with internal processes, such as memory strategies, reflection, and self-motivation which is also supported by (Baviskar et al.(2009); Bruning et al.(2011); Santoyo, (2016).

2.2.2.4 Assessment

Constructivists' advocate for multiple and authentic measures of assessment because these provide a richer insight into the learner's construction of knowledge (Hollin, 2011). Constructivist instruction has various forms of assessment, which include use of anecdotes, oral presentations, peer assessment, portfolios, projects, simulation, as well as student designed assessment.

Portifolios, projects and self-assessment are more aligned to the constructivist approach and manifest 'assessment as learning' than in the traditional approach where 'assessment is for learning." According to Tuma et al. (2018) in a study teacher evaluation systems may consist of frequent or infrequent formal and/or informal observations and feedback, as well as measures of student achievement growth. The constructivist approach to evaluation is subjective and does not look forward to uniformity in evaluation as it takes into account multiple perspectives presented by students. However, Margo (2006) in a study, observes that

examination is the major assessment method that tutors use to assess students, especially, their capacity to recall knowledge. The assessment practices applied in teacher preparation are more of evaluation than assessment which gap this study solicits for a comprehensive assessment beyond scores.

2.2.3 Implementation of Constructivist- Informed Teaching

Several studies have been carried out on implementation of constructivists teaching. Baviskar et al. (2009) and Hartle, et al. (2012) in their studies provided a framework for understanding practical application of Constructivist Theory in the classroom. The success of a constructivist teaching and learning practice not only depends on the learners' participation, but also relies on the teacher's application of constructivist instruction (Brown, 2012). However, Brown observes that pre-service tutors sometimes find it difficult to teach in a constructivist, dialogical manner because of the overloaded curriculum which has to be covered in a short period of time.

Reflective practice is one of the indicators of a constructivist's teaching. Toom et al. (2014) in a study clarifies the basic structure of student teachers' reflective thinking. It presents a constructivist account of teacher knowledge through a detailed analysis of various patterns of reflection in student teacher portfolios. Instead of basing on scores, constructivist teachers keep a record of best pieces to develop profiles for each student. The study expressed concern that there is lack of agreement about how to conduct empirically and theoretically supported reflection in teacher education. The study closely analysed portfolio texts and the results revealed that student teachers can reflect beyond solely practical issues on teaching, articulate multiple concerns about practice and elaborate them in an integrative manner, as well as learn both from theory and from practice as a result of reflection for their future profession. Portfolios make Teachers' Pedagogical Knowledge more public and visible as these document teaching and articulate professional knowledge of how and why teachers teach the

way they do. This study introduces a relevant way of teachers' assessment. However, it was based on qualitative portfolio data from a relatively small number of student teachers.

2.2.3.1 Teachers' Roles

Constructivism in classrooms suggests several changes in the role the teachers have to play (Gupta, 2011). According to a study by Kaushik (2018) the constructivist approach values the student's experience and voice, thus, making them active participants. These studies express a dramatic change of roles and imply that the teacher becomes a facilitator who needs to display totally different set of skills than a traditional teacher. The teacher is not a fountain of knowledge and has to respect and trust the fact that students have a capacity to 'create and re-create' their world.

The teacher's role in a constructivist classroom is not so much to tell students, but to act as an expert learner who can guide students into adopting cognitive strategies, such as self- testing, articulating understanding, asking probing questions, and reflection. Kaushik, further, clarifies the duty of the teacher in a constructivist classroom as to organise information around big ideas that engage the students' interest, to assist students in developing new insights, and to connect them with their previous learning. Constructivist tutors assume several roles, depending on the task, time, venue and situation when teaching students. Lunenberg, et al. (2014) in a study clarifies some of these roles, namely teacher, coach, researcher, curriculum developer, gate keeper and broker. In constructivist teaching, the learners are clustered in small groups to enhance dialogue and collaboration between the teacher and learners. The decisions, planning and control are shared, while the teacher assumes the roles of guide, facilitator, coach and surrogate.

In a study conducted by (Ibiloye, 2021), blended learning and the hybrid strategies exemplify a growing shift from teacher-centred to learners-centred, particularly, social-contexts and scaffold instructional or pedagogical approach. According to Ibiloye application of ICT and

any form of technology in teaching is a constructivists' practice which enables the students to share and interact with the programme, content, the immediate and distant instructor, and other students both individually and in groups such as the blended learning. Introducing teachers to new technologies for teaching and learning can support a change in teaching practices (Lawless & Pellegrino, 2007). Dennen and Hao, (2014) in their study supports the use of mobile technology in teaching which is regarded as suitable for cooperative and collaborative learning activities from a constructivist standpoint as it offers opportunities for peer interactions.

In conclusion, the literature review clarifies on the constructivist principles and practices along with what is expected of a teacher in a constructivist's classroom, for example, setting tasks that cause students to think and generate knowledge. However, the literature does not clearly explain why tutors continue to opt for the transmission mode of instruction, which this study had to neatly establish. On analysing the benefits of constructivist teaching, all these studies do not provide practising educators with the necessary means to reconstitute and embed constructivist ideas within their personal philosophies and teaching practices. Secondly, teachers might design useful constructivist learning environments and strategies, but may not recognise that they operate from a constructivist paradigm and, finally, even when constructivist teaching is recognized as valuable and relevant in our times, few guidelines exist for implementing and assessing it.

2.3 School Practice Supervision

The SDG4s articulate lifelong learning and also emphasize the four pillars of learning (UNESCO, 2015). Even for teacher preparation 'learning to know' is not enough without the other pillars especially 'learning to do,' which implies that students require adequate practice to get equipped for the classroom. School Practice occupies a key position in the programme

of pre- service teacher education because it marks a transition from theories in the classroom to practice in a school setting (Rugyendo, 2011).

Practicum provides students with supervised experiences and an opportunity for them to understand the full scope of teachers' roles (Fekede & Gemechis, 2016). School Practice during pre-service teacher training produces more effective teachers and higher learning outcomes (Co et al., 2016; Hightower et al., 2011; Muraya & Wairimu, 2020). The concept of School Practice is deeply rooted in the drive towards the education and training of competent, professional and accomplished teachers. It is, therefore, important that pre-service teacher training programme should incorporate adequate time for teachers to practise in a real classroom situation. These studies express the fact that little time is allocated for classroom practice during pre-service teacher preparation (Muraya & Wairimu, 2020; Wasonga et al., 2015) but do not suggest the appropriate time to be allocated to the activity.

2.3.1 Tutor Beliefs on Supervision

Increasing attention is being given to teachers' beliefs, since the paradigm shift in education from behaviourism to constructivism (Yesilyurt, 2022). The constructivist view asserts that individuals' actions are mainly shaped by their beliefs, which are derived from their earlier experiences. Likewise, pre-service teachers enter teacher training programme with some form of beliefs about teaching and learning, which have been influenced and shaped mainly by their previous schooling experiences.

In a study by Cabaroglu (2014), learning in colleges is identified as being synonymous with theory, while School Practice is the practical component of the teachers' course. At the college, students learn about teaching through a variety of theoretical expositions, demonstration, team teaching and micro teaching sessions. On the other hand, students learn how to teach through field experiences in the practising schools. School Practice, therefore, is

an important college activity and component in teacher preparation, since it is where the pedagogical theory learnt can be put into practice. However, there is a prevalent argument in several studies that theory learnt in teachers' colleges is largely divorced from the real challenges of classroom teaching (Anderson & Freebody, 2012; Childs et al., 2013; Chiwimbiso et al., 2017; Gravett et al., 2014). According to Arnett and Freeburg (2008) in their study, teachers are ill- prepared for the world of work. The professional competence of teachers is deficient with unsatisfactory content knowledge. Teachers exhibit weakness at practical teaching and a number of graduates are not up to the standard. Otaala, et al. (2013) expounds on the likely cause of weaknesses as being the narrow perspective of School Practice, and states that supervisors and students concentrate on lesson presentations (teaching practice) instead of looking at all issues in the schools.

2.3.2 Constructivist Supervision Practices

Constructivist teachers uphold indirect and non- authoritarian ways of working with students. Tutors use dialogue, and through students' personal reflections, concerns are discussed and amicably improved. According to a study by Shurts (2015) and Whiting (2007) supervision is complex and involves a multileveled dialogue, and numerous stories, which makes postmodern approaches a good fit for meeting these fundamental supervisory goals. The application of post-modernism, especially constructivists practices in supervision, allows supervisees (students) to make their own meaning, while collaborating with the supervisors.

Tesfaw and Hofman (2012) and Shurts (2015) in their studies state that constructivists prefer the use of collaborative or clinical supervision. According to Gupta (2011) in another study, clinical supervision aims at improving existing practices. It is one of the desired forms in teacher preparation, since it is well adapted to Clinical Supervision Theory of Goldhammer (1969) and Cogan (1973) with a focus on improving both the intellectual and professional growth of teachers. Clinical supervision is a non-judgmental approach to reflective practice

development, and is informed by neuroscience research and Constructivist Theory. Clinical supervision is an embracing strategy characterised by reflective practice, collegial observation, and reflective dialogue, collaborative inquiry, mentoring and coaching. Learning is achieved by integration into a specific implicit and explicit culture of knowledge (Woolfolk, 2010). Stephen, et al. (2008) concur that students realise the importance of a good relationship with their tutor because the tutor provides both personal and academic support.

McCurdy, (2006) in a similar study states that encouragement appears to influence multiple supervision techniques. The purpose of clinical supervision is to create a learning climate in which the student teachers can attain the skills of teaching. The supervisor (Tutor), using the clinical supervision approach, is able to supply data to the student teacher in a fair and equitable manner. According to Kwaku and Cudjoe (2016) in a joint study on supervision, clinical supervision meets the requirements of a good supervision due to its thorough and constructivist nature. The clinical supervision model is systematic and more detailed in approach and seeks to create collaboration between the tutor and student. It is objective and developmental, democratic and interactive, collegial and supportive, and also maintains rapport and mutual trust.

2.3.3 Tutors' Supervisory Behaviour

Mercers (2020), in a study, examined teacher training and beliefs in relation to the development of instructional technology-driven constructivist learning environments. Mercers aimed at discovering any existing gaps in theoretical beliefs and praxis, and developed recommendations that provide methods of merging theory into practice for both new and veteran teachers. Bruner's Constructivist Learning Theory was the theoretical framework for this study. According to Ayaz and Şekerci (2015) in a joint, study assert that the students have difficulty in meeting expected standards due to the mechanistic perennialist orientation that tutors employ in approaching both teaching and supervision School Practice.

The study gave the constructivist tenets of clinical supervision that include: basing on students' prior knowledge, enabling cognitive dissonance, application, reflection, feedback process, collaboration, shared control, and critical voice. The constructivist approach proposes a context for students to work in a relaxed manner without being under any pressure, where tutors use students' past experiences and ideas acquired from various sources, working on real-life problems by doing researches and interrogations, continuing teaching outside of the classroom, and where students are responsible for their own learning.

Dangel (2011) study that analysed research on constructivist education acknowledged the role of theory and investigated the impact of constructivist teacher education on pre-service teachers. The study established that constructivist-oriented teacher education has more influence on teacher education students' views than conventionally oriented teacher education. Conventional programs prepared teachers to teach knowledge as separate from practice, and viewed pupils as passive recipients of knowledge. Dangels study observed that constructivist program were successful in helping teachers to transform their roles and have a high impact upon teaching practices. Secondly, knowledge about teaching and learning is constructed and reconstructed through the reflective analysis of experiences. Reflection was recommended as a strategy to analysed and confront individuals' thinking, as well as an enabler to create a personal theory of teaching and learning. However, Dangel's study did not articulate standards or outcomes related to what pre- service teachers, accomplished in constructivist pedagogy, should know and do.

On applying the Constructivists Theory in practice, Suheyla and Mohammad (2021), in a similar study, observed that the majority of the presently utilised teaching methods and theories are criticised in the assertion of being ill-equipped 'Theory of Practice' models. Of all the educational theories, Suheyla and Mohammad argue that the implication of the Constructivist Theory aligns most with the needs throughout the previous centuries.

Falkenberg, et al. (2014) in their study observe that the integration of theory and practice is not a problem of applying theory in practice, but rather a problem of helping teacher candidates to develop practical wisdom (phronesis). Practical wisdom alone, without prior experience, cannot make a student effective. There is need for thorough tutor demonstration that students can weave with practical wisdom to do excellent work. However, the underlying demand remains to update and improvise the approach to function it in the most efficient way to deal with the 21st -Century demands. Educators are expected to practice the constructivist approach in teacher preparation. However, these studies do not suggest what has to be done under Constructivist Theory to meet the needs of 21st- Century teacher education.

Guangbao and Timothy (2021) in a study examine the associations of constructivist beliefs and classroom climate on teachers' self-efficacy in instruction, classroom management, and student engagement among Australian secondary Mathematics teachers. In their study, the integrated model used was to provide insightful implications on discussing the sources of teachers' self-efficacy based on the perspective of teachers' beliefs toward instruction, values on students and perceptions on classroom management. The study explored the contents of constructivist beliefs, such as using student-centred teaching methods, teachers' role as facilitators, and the engagement of students' in learning. However, restricting this study to mathematics teachers while aware that teachers' self-efficacy may differ across subjects, the findings of this study cannot be generalised to other subject teachers, which is a very significant gap.

In addition, the courses are not authentic and do not duplicate real life (Arnett & Freeburg, 2018). There is a need for change from the traditional, skill and technical model of practicum experience to one with a broader educative focus, a practicum experience that provides teacher candidates with opportunities for inquiry, for trying and testing new ideas within

collaborative relationships, and for talking about teaching and learning in new ways, which is only possible with the constructivist approach.

There appears to be minimal research which examines the way student-teachers perceive and understand the place, purpose and role of theory in their teaching practice and their emerging identity as teachers. According to a study by Zeichner (2010), teacher education continues to be characterised by a traditional approach whereby academic knowledge is viewed as the authoritative source of knowledge about teaching. Researchers observe that the divide between theory and practice makes learning how to teach very difficult (Korthagen, 2010). The student teachers spend most of their training in colleges and universities learning theory, rather than learning how to teach (Bakaira, 2018).

Sergiovanni and, Starratt (2007) specify distinct steps of clinical supervision where a one-to-one correspondence exists between improving classroom instruction and increasing professional growth and, for this reason, professional development and clinical supervision are inseparable concepts and activities. This is supported by Peizhen (2016), Santoyo (2016), Baviskar and Smith (2012) whose studies focused on what the clinical supervision entails. According to them, clinical supervision includes dialogue, feedback and critical voice, which are indicators of a constructivist environment. Gursoy, et al. (2016) in their study stresses the fact that effective supervision requires a supervisor who has the necessary skills and knowledge to support the student in becoming a reflective practitioner. Kelehear (2010) notes that supervisors with such skills as observation skills, analytical skills, data collection skills, counseling and mentoring skills have better influence on their clients' success. These constructivist practices of clinical supervision are very effective in teacher preparation.

Teachers' pedagogical practices are dependent on the manner in which they are supervised. Tutors often utilise professional practices that dampen the chances of students to effectively

learn. Usman (2015) and Rugyendo (2011) in their studies reveal that the manner in which supervisors give feedback to supervisees, significantly impacts on the student teachers' pedagogical practices and performance in classroom settings. These studies observe that supervision of School Practice in Primary Teachers' Colleges is carried out by tutors; both those who directly teach and evaluate the students and those who do not necessarily teach them. Rugyendo reports that many supervisors enter the class, write reports and hand them to students, and leave immediately without conferencing with the student teacher at the end of the lesson. Conferencing is a time when a student teacher and the supervisor discuss the lesson taught pointing out the strengths and weaknesses, which is precisely a constructivist practice. It is a time when they agree with justifications, on the areas for improvement. In a study conducted by Otaala et al. (2013) a similar practice by lecturers when supervising secondary teachers was observed. Some lecturers do not conference with the students before and after the lessons, a supervisory behaviour that is not constructivist in nature.

Various contemporary scholars emphasize the role of reflective practice in both teaching and supervision, because it is a way of making one aware of how one teaches. According to a study by Baecher and McCormack (2013), post-observation conferences (POCs) attempts to facilitate teacher candidates' self-reflection, guided by the firm belief that, through the nonjudgmental feedback of an experienced observer. Student teachers develop the capacity to assess their own practice following the reflective practice cycle (Gibbs1998), as shown in Appendix 16. Reflective practices are, therefore, seen as a learning strategy whereby professionals can make self- assessment and also get feedback in a friendly manner (Herington et al., 2010). These studies affirm that reflective practice would be a prerequisite in teacher preparation as it is relevant in all aspects of a teacher's life. According to Okafor (2012) in a study, reflective practice is a meaningful constructivist instrument in practiced-based professional learning settings where students learn from their own professional

experiences, rather than from formal learning or knowledge transfer. However, in a study conducted by Otaala, et al.; (2013), they observe that many teacher educators do not think that reflection is an important practice of an effective teacher education programme or, indeed, many according to researchers, are not familiar with the reflective practice.

In a study conducted by Bailey and Garner (2010) on written feedback, the feedback given to students is dependent on the language used on the forms. Usually, the meaning or intention of feedback is often too vague and abstract for students to fully understand and adapt. This agrees with Rugyendo (2011) who observes that supervisors are too much in a hurry to help students. Pokorny and Pickford (2010), Yoon et al. (2013) and Langer (2011), in their studies on supervision feedback, concur that written feedback on pre-service teachers' teaching practice does not bring forth changes in their understanding, decision making and action, as intended. These studies suggest the ways of making the process of feedback effective, and also pointed out crucial aspects for improvement of performance, namely, shared purpose and desired outcomes between the student and tutor, and as well as reflective interactions among members.

Bakaira (2018) emphasizes the need for tutors to integrate ICT in assessment practices, reflective practice, micro teaching and peer supervision in the development of teachers for primary schools. Application of technology in supervision can improve student -teachers' practical teaching through reflection and devising personal options as redress to identified instructional sessions. The idea is supported by Habler et al. (2016) who emphasizes the fact that teacher education is central for the successful integration of digital technology into the classroom. Pre-service education needs to build in technology experiences with a view to developing the knowledge and confidence of teachers. Educational research shows that, with more developed educational systems, interventions that combine resource-based interventions and teacher development stand the best chance of success. Video analysis has proven to be

much more useful when it restricts itself to actions that can be seen and heard in a video clip. Tutors need acquaintance of recording and making a video analysis to help students to analyse and improve their lessons.

Goulding et al. (2015) in a study analysed how institutions for teacher education in Australia, which are typically faculties of education in universities, go about organising and assessing the school practicum, and how they use ICTs for that purpose. This study observed that organising and assessing practicums is a huge challenge for teacher educators. The study emphasized the need to capture teachers' performance evidence in digital format (video) and to make it available for reflection, discussion and assessment through e-portfolio systems. The study reported that use of video analysis to reflect on a teachers' performance played an increasing role in documenting elements of learning and competence involved in the move from intellectual understanding to professional enactment in practice settings. The professional practicum in authentic practice settings and its assessment is critical to the education of students in many professions, including teaching; it enables students to move from their intellectual understanding to enacting this within practice. Therefore, use of video analysis as a constructivist strategy enhances self- assessment, confidence and improvement in teaching. The study, further, proposed a method to have students build video portfolios that could evidence growth and that, additionally, would include reflective narratives along with the video materials. However this study did not specify a practical way of getting this done which gap demanded redress.

Lengel (2015),in a study on video analysis of teaching at Hunter College reported that when preparing teachers for the public schools of New York City, the college deployed an online system for capturing, uploading, analysing, and assessing the act of teaching in the classroom. All students for certification were required to capture themselves at work on video, and then to subject this recording to several forms of analysis. The aim was to improve the candidates'

teaching, and to enable the faculty to focus on classroom practice. Over 5,000 teachers went through the process of video analysis. The study reported that the Hunter Video Analysis Program is the most sophisticated technology tool for the preparation and improvement of teachers. However, relying on video analysis alone restricts itself to observable actions, and this may not capture other relevant attributes of good teaching and effective supervisor-supervisee face –to- face interaction.

The use of constructivist approaches can help to refine students' skills and techniques through micro teaching. A video vignette of a session can be meaningful to a student teacher to analyse and advise self on how to improve which is more effective than a tutor analysing the lesson for him or her. Micro teaching is an important School Practice related activity that is based on constructivist principles. Micro teaching is a brief, but structured, practical experience in which prospective teachers would begin to bridge the theory-practice gap by planning and presenting a five to ten minute lesson, in which they were to apply specific instructional skills or tasks previously studied in class (Edwin, 2014). Micro-teaching lesson study enables the student teachers to work collaboratively in teaching practice through its steps of collaborative lesson planning, teaching and observing, and reflecting and, thus, depicting constructivist aspects. Those steps give opportunity for student teachers to recognise their problems as well as to deal with them well (Merglera, & Tangen, 2010; Richards & Farrell, 2011).

Team teaching is another constructivist strategy used in colleges to prepare students for School Practice that has several benefits (Bleiler (2012). Firstly, it offers the partners an opportunity to brainstorm (a productive dialogue), share knowledge as well as ideas and plan a lesson or unit to be taught in each other's classes. Secondly, it provides the chance to observe other teachers in action, a factor that ensures that one can adopt best practices observed, as opposed to being 'told' what to adopt. Thirdly, the team is able to handle diverse

students and consequently learn how to deal with each child, thereby, improving understanding and retention of content. The team members are exposed to different personalities and teaching styles, a factor that leads to more enjoyable learning (Daresh, 2003). However, Badali (2013), in a comprehensive study, observes that, though some students can form learning communities where they can closely examine their pedagogy to ensure its meaningfulness, relevance, and appropriateness, some individuals are very resistant to a team-teaching approach because they believe that it has negative implications for superiority, while others are opposed to collaborative teaching models based on the belief that it violates their academic freedom.

Constructivist supervisory practices amplify the need for collegiality, collaboration, dialogue and mutual respect which are tenets of clinical supervision, as specified in all these studies. A good constructivist informed supervisor avoids directing, dictating, or lecturing students on how to teach, but instead, uses indirect styles and Socratic methods to help students to come up with better ways of teaching. However, the studies reviewed do not articulate why tutors resist the clinical supervision cycle and opt for the traditional authoritarian supervisory behaviour and neither do they suggest what has be done to reverse the situation, which is a significant gap identified.

2.4 Constructivist- Guided Coaching and Students' Professional Growth.

Constructivist informed teachers use an indirect style to approach issues in an effort to help students to improve their behaviour without any form of coercion. Coaching is a constructivist strategy in handling day- to- day issues particularly, in the non- classroom-based activities. A student can be guided on the dressing code without directing or hulling insults. The conversations that go on between the tutors and students help in developing critical thinking and deriving self-generated options, which make students to be responsible

for their own decisions (Whitmore, 2009)**.** The professional growth can be enhanced through coaching, collaborative planning and teaching, and the sharing of good practices.

2.4.1 Tutors' Beliefs on Constructivist Guided Coaching

Constructivist guided coaching is an important joint meaning-making and complex interpretative process (Bachkirova, et al., 2017). The Bachkirova, et al., in their study clarify the intentions of constructivist guided coaching, being to enhance professional practice, reflexivity and criticality, as well as to project uncertainties and to develop both ethical and professional maturity.

Whitmore (2009) in a study describes constructivist guided coaching as a form of in- and-out of class support used to provide students with feedback on their practice as a means to stimulate self-reflection. Whitmore found out that coaching was generally perceived as positive by teachers, with the potential to improve professional practice. Constructivist-guided coaching produces excellent, efficient and effective meta-teachers by empowering them to learn, grow and develop as professional teachers through a supportive relationship and manner of communication.

Aguilar (2013) , Ali et al. (2018) and Marco (2013) in their studies also clarify that constructivist guided coaching enables an individual to identify and achieve future goals through assessment, discovery, reflection, goal setting and strategic action while putting focus an individualised learning process that focuses on individual growth (both personal and professional). According to Swan et al. (2009), coaching is a very personal and specific approach to working with a critical friend as it offers an opportunity to search for disconfirming data – rather than rationalising existing behaviour.

On constructivist guided coaching, Bryan, et al.; (2013) in their study identify specific constructivist behaviour to ensure students' professional growth, such as collegiality, social interaction and the use of discourse, authority and facilitation, action and reflection,

autonomy and community, process and content; power and empowerment, as well as critical thinking. Constructivist guided coaching helps the students to perfect and refine their behaviour by just improving on what they observe, for example, students observing other students' language structure and manner of talking, dressing, pace of working, keeping time, endurance, mention it. These studies express the need for coaching and mentoring programme at colleges that support students as they transform from being students to school teachers. According to Banerjee (2013) in a study, tutors are responsible for producing quality teachers and for mending the existing system with a vision to help teacher education grow as a profession and to produce quality teachers for schools. Tutors have multiple roles to play in shaping students conduct, mind-set and professionalism (Filipatali, 2013; Lunenberg et al., 2014; Meena, 2009; O'Sullivan, 2010) and they have the responsibility to coach the students in all areas of the teaching profession, including professional behaviour and conduct.

Much as these studies express the power of coaching and, as well, explore tutors' different roles, the focus of most studies is on the formal activities ignoring the hidden curriculum (non- classroom based activities). Crawford (2016) in a study in support states that, a tutor is expected to serve as a coach, mentor, planner and an assessor in an effort to prepare and produce a competent and holistic teacher.

2.4.2 Implementation of Constructivist Guided Coaching in Non-Classroom Based Activities

Teacher-preparation is an interactional and transactional process with a series of activities for students' engagement that enable their professional growth. According to Smith (2010), professional growth is a process in which students engage within a formal or informal framework to analyse professional practice as a means to improve their way of life. Teacher preparation entails activities that groom students to become professional teachers. Besides what students learn in subjects, there are a series of things (formal and informal) they learn from peers and other people in the college to refine their behaviour.

According to a study by Marco (2013) coaching is an emerging constructivist strategy for tutors the development of students' professional growth and development, since it entails dialogue between teachers and their students either formally or informally, which awakens students' aspirations and thinking. Constructivist guided coaching plays a vital role in teacher preparation, especially, in shaping students' character and professionalism. Studies by Anghel and Voicu (2013), Wang (2012) and Vogt and Rogalla (2009) in support, observe that teacher preparation based on coaching, can cause the students to adjust and change their learning styles, thus, becoming more creative, curious, strategic, adaptive, as well as critical when thinking and when preparing pupils' activities.

A study conducted by Ferreira and Schulze (2014) stresses the importance that teachers understand and implement constructivist principles. The study expresses the need for suitable training due to lack of knowledge on how to address practical challenges with values in education or how to consider the hidden curriculum (the non- classroom based activities), and how to use different strategies effectively to facilitate the development of values in education.

According to Disu (2017), teachers' professional growth can be enhanced when the teaching is tailored to the students' needs by ensuring use of follow up activities, coaching support, and opportunities for practice. This is supported by York-Barr, et al. (2006) in that reflective teaching practice helps to expand a student's learning about his or her practice, given the different perspectives of another person and when coached through a process of reflective inquiry. Disu (2017) suggests several creative methods to train students in various life skills such as self-awareness, creative thinking, effective communication, coping with emotion, and coping with stress, in a joyful and interesting manner.

Agarwal (2017), Jha (2009), Crawford (2016) and Tyagi (2009) expound practical ways to enhance students' professional growth and identified major constructivist methods that can be used to coach students, which include, distributed cognition method and co-operative learning method that comprises class discussion, brain Storming, storytelling, debate, situation analysis and case study method as well as other creative methods, such as, role play, games, poetry recitation, dance, and music. In the process as they learn in a formal way, these methods enable informal learning which requires a good coach to foster professional growth. The informal experiences initiated into students, though not examined, contribute to nurturing a sound professional teacher.

Coaching facilitates conversations between tutors and students about planning, reflecting, and problem solving. In support, Hyson, Tomlinson and Morris (2009) state that coaching helps students to retain information while simultaneously providing constructive feedback that can be conducive to improved teaching and professionalism. However, in the study conducted by Ali, et al. (2018), despite the power of coaching to transform teachers' professional learning, the quality and effectiveness of coaching is always affected by lack of time by tutors.

2.4.3 Management of Non-classroom Based Activities

Manit and Chowwalit (2016), in a study on developing a coaching model, made a survey on a hundred teachers to establish opinion on usage and to evaluate the activity management of the model. The teachers had anxiety in constructing the model and wanted to develop that skill. The teachers shared their teaching experience, as well as showed group leadership skills and shared values and vision in developing their teaching competence. The study concluded that the approach of coaching and mentoring was a technique used to develop a professional teacher. This is supported by Byran, et al. (2009), in a study on coaching and mentoring stipulating that coaching offers powerful learning opportunities to pre-service teachers, which later translates into powerful learning in schools.

A study by Ali, et al., (2018) states that teachers today need, not only to assimilate academic knowledge but also, to incorporate knowledge derived from experiential and practical experiences in the classroom. However, tutors who use vulgar language, dress poorly and conduct themselves in absurd ways can cause ridicule and disrespect of the profession, and that is why it is important for a tutor to be exemplary all the time. Professional growth commences while a student is still at college and continues to get refined through multiple ways as per the dimensions of curriculum. Constructivists treat the informal and non- formal activities as very important for not only complementing the formal activities but also, parcelling each individual's background, culture and prior knowledge, which enables both assimilation and adaptation of experience. This concurs with Otaala, et al.; (2013) in that non- academic activities teachers are involved in, such as co-curricular activities, guidance and counselling, mentoring and modelling are included in the broad definition of teaching. However, many teachers do not regard co-curricular activities and other non- classroom based activities as important in teacher education curricula. The non- classroom based activities set a context for constructivist guided coaching where tutors get the opportunity to guide students on personal and several professional issues. It is also anticipated that pupils' learning and achievement are maximised by teachers who are better prepared and have enhanced professional growth. These studies emphasize that tutors have additional responsibilities that include providing critical and evaluative feedback to pre-service teachers, helping pre-service teachers acculturate into the broader profession, and being willing to invest themselves in a professional relationship with pre-service teachers in their charge.

In a research by Bjerken (2013), conducted on teachers' perceptions of coaching on their professional practice, the teachers identified experiencing an improved ability to reflect, which encouraged them to make this a habitual form of their teaching practice, as well as

their professional growth. Reflective practice is essential to comprehend when examining the potential for or existence of professional growth (Ficke, 2020; Mbugua, 2011).

The constructivist process of reflection is applicable as students learn, during school practice and in the non- classroom based activities. Self-reflection in collaboration with administrators, coaches, mentors, or peers can provide teachers with even more new understandings about their professional conduct. Studies concur that reflective practice enables tutors and students to have an opportunity to view multiple perspectives, generate new knowledge to apply it to practice as well as share outcomes with colleagues. (Disu, 2017; Mercer, 2020; Miguel et al., 2013; Williams & Ritter, 2010). Reflection influences what a teacher perceives, feels, sees, and learns. Korthagen (2004) affirms that, by creating and sharing their understanding of practice through the results of their own research, student teachers perceive the distinction between theories, practice and transmission of knowledge. The tutors and students need to engage in an active dialogue (Socratic learning) an approach which aligns with Bruner (1966) Theory of Instruction, which puts emphasis on methods for structuring knowledge that results in simplifying, generating new propositions, and increasing the manipulation of information. Reflective dialogue as a way of coaching is very meaningful to students as they work together to reflect on what happened and try to develop strategies for improvement. During such dialogues, teachers make their thinking processes known and they encourage the learners to share their personal opinions with others and to elaborate their responses (Cornu & Peters, 2005).

Despite the findings of these studies on the benefits of reflective practice as a constructivist strategy for effective teaching and learning, there is a gap in the literature concerning a consensus on reflective practice and description of reflection among teachers.

In conclusion, these studies question the quality of teacher preparation and the levels of professionalism. The studies focus more on what prevails in the classroom as the students

learn or when students are on school practice. There is not any form of accountability on other activities when students are not in the classroom; neither do these studies suggest explicit solutions to how professionalism can be enhanced.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter comprises of the research design, methodological design, location of the study, sample distribution and techniques, research methods, quality control, procedures, data management and ethical consideration.

3.1 Research Design

A qualitative approach was adopted for this study because of its intensive and in-depth nature where the researcher takes into account the phenomenon as a whole and describes it as it exists (Adom and Akwasi, 2016; Vijay, 2013). The study adopted a phenomenological design which enabled the researcher to investigate the implementation of constructivist approaches in teacher preparation. According to Abakpa, et al. (2017), Ponce (2014), Creswell (2013) and Mohajan (2018), phenomenology has its roots in philosophy and puts emphasis on understanding phenomena with focus on the lived experience of individuals. It is also a genuine manner of representing the realities that participants experience in their lives on issues that have been taken for granted (Padilla- Diaz, 2015; Shisanya, 2019; Yuksel & Yuldrim, 2015).

3.2 Methodological Design

Philosophical studies are selective on the research methods to overcome the assumption that all disciplines must employ a specific way or process in carrying out research (Munene et al., 2019; Odour, 2010; Umanailo, 2019). Creswell (2013), Adom, et al.; (2016) and Kim (2005) identified several methodological designs associated with qualitative research, specifically, for the constructivist philosophical paradigm, where phenomenology was a more suitable approach for this study.

The study took an interpretivist philosophical stance where knowledge is regarded as subjective and reality as relative (fluid). Interpretivism is heavily influenced by hermeneutics and phenomenology (Shisanya, 2019). Phenomenologists advocate for the need to consider participants' subjective interpretations, and their perceptions of the world (their life-worlds) as a starting point in understanding social phenomena (Imiere, 2021; Lynch 7Smith, 2011).

Phenomenology, from an epistemological perspective emphasizes revealing meaning and understanding rather than developing a theory (Nutter, 2015). Phenomenology was relevant to this study since the actions of tutors and what they say can reveal what they comprehend and feel about teaching. Understanding tutors feelings and thoughts about teaching is useful particularly to those who design and develop teacher education programmes. A constructivist perspective was utilised because it incorporates a larger scope of vision that is varied, multiple and allows for the recognition of each participant as a unique contributor to the complexity of the whole perception of the phenomenon. Therefore, this study was based on the Constructivist Theory, because each of the participants constructed his or her own meaning and understanding of teaching.

3.3 Location of the Study

The study was conducted in three purposely selected Teacher Training Institutions (TTIs) located in South Eastern Uganda. There were four TTIs in South Eastern Uganda three of which were Government Aided, and the other private. The selected colleges comprised of only government aided TTIs namely Kaliro, Jinja and Bishop Willis. The private TTI was excluded because of its being disadvantaged in terms of students' population, staffing and funding. The selected colleges manifested well the phenomenon under study, mainly the focus on the instructional process, pedagogical preparation and supervision of School Practice.

3.4 Target Population

The target population consisted of School Practice Coordinators, tutors and Year Two PTC students from three Primary Teachers' Colleges as the main respondents. Yuksel and Yildirim (2015) explain that a researcher selects participants at discretion depending on how they perceive the phenomenon being investigated.

3.4.1 Sample Size and Sampling Techniques

Samples taken in qualitative studies are generally much smaller than those used in quantitative studies. In qualitative research, three to twenty five members may be enough (Amparo, 2013; Mayring, 2014; Mason 2010; Moustakas, 1994; Padilla- Diaz, 2015; Shisanya, 2019) with saturation as a guiding principle (Kakuru, 2019). Phenomenological research is considered directive as its sampling method is purposive for both sites and participants (Padilla- Diaz, 2015), characterised by the incorporation of specific criteria, such as participants' expression, being familiar with the phenomenon, and willingness to provide information-rich data (Amin, 2005; Creswell 2013; Merriam, 2009; Shisanya, 2019).

Padilla- Diaz (2015) and Yuksel and Yildrim (2015) criteria was used to determine the sites, sampling technique and sample size. Purposive sampling method was used to select three PTC's in South Eastern Uganda from which a sample of nine tutors and eleven students was selected using a criterion-based purposive sampling method. The criterion for participants was that they were a (a) tutor serving as School Practice coordinator at the college (b) a tutor who had been at the college for at least five years, and (c) an articulate Second Year student at the college.

Table 3.1 shows the sampling technique and sample size.

Table 3.1 Sample Distribution and Technique

Participants	Number of Participants	Sampling Technique
Student teachers	11	Purposive Sampling
School Practice Coordinators	3	Purposive Sampling
Tutors (subject/supervisor)	6	Purposive sampling

Source: adapted and improved from Padilla-Diaz (2015)

3.5 Methods

In- depth interviews, observation and document analysis were used in this study. Bowen (2009) contends that qualitative research draws upon multiple sources of evidence to seek convergence and corroboration through the use of different data sources and methods. The instrumentation usually administered in the constructivist philosophical paradigm is through interview, observation, document review and visual data analysis (Adom, et al., 2016; Kalender, 2007). The following methods were used to collect the research data.

3.5.1 Interviews

The most appropriate and major data collection strategy for a phenomenological research is the in-depth interviews with participants (Alshenqeeti, 2014; Dornyei, 2007; Kakuru, 2019; Padilla- Diaz, 2015; Schostak, 2006). For this study, in- depth interviews were used because these are open and have greater flexibility and freedom for both the interviewer and interviewee. Unlike the use of inquiry to elicit stories of the lived experiences, this study employed both active and long Interview methods. The active interview is a form of interpretive practice that involves both the respondent and interviewer in articulating the ongoing interpretive structures, resources, and orientations (practical reasoning), while the long interviews enable the investigator to take a penetrating glimpse into the minds and lives of their respondents (Munene et al., 2019). The interviews were held like normal

conversations in a natural setting, following an interview guide (Appendix 3 and 4), but with an opportunity to probe, reframe and refocus aiming at having an in-depth description and information extraction about a certain topic or issue.

The interview guides had three sections to obtain data on how students are taught, supervised and guided in the non- classroom based activities. Each section, further, probed beliefs, manner of implementation and the disparity from the Constructivists' Theory.

The improved Constructivist Learning Environment Survey scale (CLES) adapted to the Uganda education contexts served as a guide to establish constructivist practices and to ascertain a constructivist teaching- learning environment attributes, namely, personal relevance, uncertainty, critical voice, shared control, and student negotiation, as developed by Hartle et al. (2012).

3.5.2 Document Analysis

Document analysis is often used in combination with other qualitative research methods as a means of triangulation, which also strengthens the levels of credibility (Bowen, 2009; Munene et al., 2019). Amparo (2013) stated that such material can provide rich descriptions of how the people who produced the materials think about their world. Document analysis served as a complement to the other research methods used in this study.

For this study, document analysis was used to ascertain the conditions that infringe upon the phenomena (constructivists teaching) and to seek convergence and corroboration of the data obtained from the in- depth interviews and observation. The interpretive analysis aspect of document analysis was used by the researchers in reviewing the written materials to establish constructivists elements that were relevant to school practice supervision (refer to appendix 5).

Documents on students' classroom and teaching performance .That is; supervision reports, analysis records, as well as anecdotal and reflective journals, were analysed and examined to

establish relevance, quality and nature of support given to student teachers, and also to corroborate study findings. The researcher analysed the comments and notes on the documents to ascertain and establish whether the tutors were guided by constructivist' approaches or had a traditional, mechanistic, dominative and perennial orientation.

Table 3.2 shows the documents and the data that were analyzed.

Table 3.2 Documents and Data Analysed

Documents Selected	**Data Analysed**
Supervision Reports	The language used and nature of comments.
Post observation Reports	Evidence of pre and post observation conference, explicitness of concerns and follow -up plan
Reflective Journals	Ascertainment of the practice of reflection
Wide lens	Ascertain the use of technology and use of hard data for purposes of reflection and retrievals of incidents.
Timelines	Ascertain students' teaching orientation
Seat Works	Establishment of students verbal flow, classroom dialogue and teachers movement.
Students Ranking	Ascertainment of the modes of students assessment in School Practice.
Portfolios	Establishment availability of any other documents or objects that capture unique and outstanding performance of individuals.

3.5.3 Observation Checklist

An observation checklist was devised to establish constructivist approaches used to teach students, supervise and to guide students in non-classroom based activities, the rubrics clarified on the varying constructs to observe (Appendix 1, 2 section a, b and c). The approach commenced by first observing as an "outsider," then, later, participating and observing as an "insider" to explore the application of constructivist domains. *Participant observation* is appropriate for collecting data on naturally occurring behaviours in their usual contexts (Vijay, 2013; Kumar, 2011).

3.6 Quality Control of Instruments

The instruments attracted expert in-put to ensure essence and trustworthiness. The standards for judging the trustworthiness of qualitative research are basically: credibility, transferability, dependability and conformability (Creswell, 2013 Kafle, 2011; Lincoln & Guba 1985). The four terms credibility, transferability, dependability, and conformability are the naturalist's equivalents for the conventional terms: internal validity, external validity, reliability and objectivity.

3.6.1 Credibility

In enhancing credibility for this study, the strategy was to solicit adequate representations, transparent processes for coding, and drawing conclusions from the raw data. The researcher ensured: prolonged engagement in the field, persistent observation, triangulation, extensive field notes (referential adequacy), checking interpretations against raw data, regular reviews and member checking, as suggested by Vijay (2013) and University of Sothern Califonia [USC] (2017).

3.6.2 Confirmability

The researcher adopted reflexivity and triangulation of methods to reduce the effect of investigator bias. This technique enhanced authenticity as it involved describing and explaining the situation or contexts as truthfully as possible while taking a personal view from a stance. The major technique for establishing confirmability can be through audits of the research processes and findings (Kakuru, 2019; Vijay, 2013; Hsieh & Shannon 2005).

3.6.3 Dependability

The aspect of dependability was enhanced by ensuring the consistency of the study's processes, from conception, data collection, interpretation, and report writing as a strategy. Dependability is being able to account for changes in the design of the study and the changing conditions surrounding what is studied (Kakuru, 2019; USC 2017; Hsieh & Shannon 2005).

The multiple interviews enabled probing, refocusing and refining of the questions, tailoring them to the research objectives. The multiple interviews were an opportunity for gradual improvement and refining of specific questions (Babbie, 2013; Creswell, 2014; Malmqvist et al., 2019; Pritchard & Whiting, 2012; Williams-McBean, 2019).

3.6.4 Transferability

The researcher provided data sets and explanations that were rich enough to enable other researchers to make judgments about the findings of the study and their applicability to different settings or contexts (Hsieh & Shannon 2005; Vijay, 2013; Yuksel & Yuldrim, 2015). This was done through providing the data sources to enhance the transferability of research findings. As a way of validating the data, classroom observation of other teachers, and interviews with SPCs, Tutors and sampled students was a form of triangulation to validate whether it yielded similar findings.

3.7 Data Collection and Procedures

On approval of the proposal by the Directorate of Research and Training, the researcher prepared the research instruments which were sent to Gulu University Research Ethical Committee (GUREC) for approval before putting them to use. The data was gathered site by site in three phases (details in Appendix 18). Each phase handled a particular research question.

In the first phase, interviews and observation were used to obtain data on the constructivist principles used in the teaching of students at PTCs. Observation was used to establish implementation of constructivist principles and thereafter, twenty minute interviews were held with each selected respondent.

At the second phase, observation was used three times to obtain data on preparation of students for School Practice, actual school supervision and conferencing with students. The second phase was to observe students art of instruction and tutors supervisory behaviour

during school practice. Interviews were used after each observation to ascertain the motives of observed practices. Document analysis was subjected to the School Practice coordinators only. Documents were accessed three times from each School Practice coordinators during and after school practice for scrutiny of tutors concerns, observations, feedback and follow up of conference contracts for selected students.

The third phase was carried out at colleges to get acquaintance of how tutors guide students during non- classroom based activities. Observation and interviews were used to assess the nature and manner of support given to students to enable their professional growth.

A total of thirty nine one -on-one in-depth interviews were conducted and, besides taking notes during the interviews, a pocket electronic recorder was used for purposes of precision and for further content analysis. Three serial in-depth interviews with each of the research participants was appropriate to ascertain correctness of data availed and this was done until saturation was reached (Bryan et al., 2013Yuksel &Yildirim, 2015). For observation, a video camera and electronic recorder were used to obtain hard data. The researcher used a wide lens, timeline and seat works supervisory techniques which were tailored to the instruments designed for observation to collect data before, during and after School Practice.

The data was organised, analysed, compiled for interpretation and discussion for generating findings conclusion and recommendations. Dissemination of findings was through publication in peer reviewed and non-predatory journals, like the American Journal of Education and Practice (AJEP), as well as through presentations at relevant education conferences, like the Teacher Education Symposium in Uganda. An abridged version of the study will be availed to the participants after the final submission.

3.8 Data Management and Analysis

Data was handled using the framework, as described by Padilla-Diaz (2015) and Moustakas (1994). Data handling in phenomenology is characterised by the following procedures

epoche, reduction (identifying common meanings and essence), imaginative variation (horizontalization of data), textual and structural analysis.

The researcher wrote his experiences with the phenomenon of constructivist informed teaching (Appendix 13), and, then, set those ideas aside to release any bias, preconceived ideas, and expectations regarding constructivist' informed teaching in the classroom. The researcher reflected on his preconceived ideas about the phenomenon and bracketed them (Finlay, 2014; Moustakas, 1994). This method was in preparation for reading through the transcripts of individual experiences.

The analysis process began with listing, grouping and jotting down notes from the interviews, by repeatedly reading interview transcriptions, coding data, categorising and segmenting data, identifying themes, and, finally, writing down both textural and structural descriptions of the data. The textual descriptions were based on the key words and phrases (invariant constituents) and the horizons of the experience, as suggested by (Groenewald, 2004; Moustakas, 1994; Neubauer et al., 2019).

The researcher had to transcribe the audio recordings into a script format within a word document using Nvivo and Amberscript software (Appendix 9). This process was done twice to check for accuracy. The researcher utilised member checking, a peer reviewer, and an external editor to assist in pointing out any slanting that emerged unaware. Coding was done manually using the framework where sections of the interview transcriptions were highlighted, particularly the phrases or sentences that became labels or "codes" which, later, were described and combined into themes. The descriptions from the interviews when coding, as well as the quotes that were used by each participant, generated each theme. The themes arose through a sustained engagement with the various transcripts and the researchers' scripted notes. Personal perspectives and meanings were a critical part of analysing the application of constructivist teaching.

The researcher, thereafter, embarked on cleaning the raw data and eliminated overlapping, repetitive, and vague expressions. The Qualitative Data Analysis Software (QDAS) was used at the formative stage. Prominent phenomenological methodologists argue against the use of QDAS because technology dehumanises by limiting the thinking of the user; secondly, quantity does not provide quality and, thirdly, phenomenology focuses on uniqueness rather than repetition (Adams, 2006; Davidson & Di Gregorio, 2011; Finlay, 2012; Goble et al., 2012; Heidegger's, 2008; Sohn, 2017; Van Manen, 2014).

The steps for interpreting the data included reading and rereading, noting, developing themes, searching for connecting themes, moving to the next participants' data and, finally looking for patterns across each of the participants' data. The researcher audio-recorded, with the permission of interviewees; each interview was assigned a pseudonym, for example "Saul, 21 May 2020." Where more than one interview took place on a specific date, the different interviews were identified by an alphabet character, (Saul-A, 18 June 2020). After each interview, the researcher listened to the recording and made notes. The researcher transcribed key words, phrases and statements in order to allow the voices of research participants' to speak.

Applying imaginative variation in this process supported the identification of potential meanings that unveiled the hidden and underlying factors of the participant's individual experiences. Imaginative variation revealed the 'how' of the phenomenon being studied. The individual structural descriptions reveal the hidden meanings and dynamics of the individual participant's experiences (Lin, 2013; Moustakas, 1994; Neubauer et al., 2019). The researcher used imaginative variation to unveil how individual participants experienced constructivist informed teaching.

The researcher used the idiographic approach, which is an attempt to describe the nature of individuals as unique entities, each with an own subjective experience, motivation and values (Denzin, 2012; Munene, et al., 2019).

3.9 Ethical Considerations

The research complied with the ethical requirements, as outlined in the Kyambogo University's Guidelines for Writing Graduate Theses and Dissertations, (KYU, 2016).The Study was also guided by the National Guidelines for Research involving Humans as Research Participants (July 2014) by the Uganda National Council for Science and Technology (UNCST). The researcher sought approval of data collection from the Graduate School, which was duly granted.

Informed consent is essential in every research study, and data could not be collected without a participant's informed consent. The researcher sought ethical approval and clearance from Gulu University Research Ethics Committee (GUREC), which was approved and granted.

After GUREC clearance the researcher pursued registration by the Uganda National Council for Science and Technology (UNSCT) a body responsible for approving research in Uganda. The research was approved and registration was obtained. Finally, the researcher sought permission from Teacher Instructor Education and Training (TIET) Department of the Ministry of Education and Sports (MoES) and from the principals of the sampled colleges.

The researcher prepared and dispatched the consent forms to participants and these contained all the necessary information pertaining to the study (Appendix 6 and 7). Secondly, the researcher explained all the information in a language understandable to the participants. Thirdly, participation was voluntary, and the opportunity to withdraw at any moment was open to the discretion of the participants. Finally, the consent was formalised in writing with sufficient reassurance of confidentiality. Pseudonyms were used for the participants to ensure confidentiality and anonymity while the data was kept and locked in the cabin.

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION AND ANALYSIS

4.0 Introduction

The study focused on how tutors and students experience and understand constructivist informed teaching. The study aimed at establishing whether constructivist principles were being used by tutors to equip students with pedagogical theory, pedagogical skills and professional knowledge. These elements were presented and aligned to the research questions and objectives:

i. What constructivist principles inform the teaching of students in Primary Teachers' College classrooms in South Eastern Uganda?
ii. What ways do constructivist practices inform School Practice supervisory processes in Primary Teachers Colleges in South Eastern Uganda?
iii. Is constructivist- guided coaching incorporated within the non- classroom based activities to enable students' professional growth at Primary Teachers' Colleges in South Eastern Uganda?

The findings are presented in four sections, where Section One provides the demographic information concerning the respondents and the sources of data. The next three sections represent the three main research questions, each with its sub questions, respectively.

4.1 Demographic Information of Participants.

The study involved fifteen participant purposively selected from the three sampled Primary Teachers' Colleges in the south Eastern region of Uganda. The participants comprised tutors, school practice coordinators and students, whose details are shown in the Table 4.1.

Table 4.1 Demographic Details of Tutors, Students and School Practice Coordinators

No	Participant Psuedonyms	Age	Gender	Category	College	Academic status	Experience in years	Subject interest and specialisation
1	Saul	51	Male	Tutor	Jinja	Graduate	Over 10	Agriculture Education
2	Ali	59	Male	Tutor	Jinja	Graduate	Over 20	Professional Studies
3	Zuena	38	Female	Tutor	Bishop Willis	Graduate	Over 5	Psychology/ Mathematics Education
4	John	42	Male	Tutor	Bishop Willis	Graduate	Over 10	Mathematics Education
5	Mercy	58	Female	Tutor	Kaliro	Diploma	Over 30	Language Education and ECE
6	James	49	Male	Tutor	Kaliro	Graduate		Science Education
7	Joseph	20	Male	Student	Jinja	O- Level		
8	Hamidah	20	Female	Student	Jinja	O- Level		
9	Agnes	21	Female	Student	Jinja	O- Level		
10	Stuart	24	Male	Student	Jinja	O- Level		
11	Felistus	22	Female	Student	Bishop Willis	O- Level		
12	Esau	20	Male	Student	Bishop Willis	O- Level		
13	Brenda	21	Female	Student	Bishop Willis	O- Level		
14	Dickson	24	Male	Student	Kaliro	O- Level		
15	Martha	21	Female	Student	Kaliro	O- Level		
16	Jacob	20	Male	Student	Kaliro	O- Level		
17	Immaculate	3	Female	Student	Kaliro	O- Level		
18	Thomas	56	Male	SPC	Kaliro	Graduate	Over 25	Science/ Mathematics Education
19	Hannah	39	Female	SPC	Jinja	Graduate	Over 10	Kiswahili Language
20	Betty	44	Female	SPC	Bishop Willis	Graduate	Over 10	Special Needs education

Table 4.1 summarises the profile for each participant and the researcher used pseudonyms in this study for the different descriptions and quotes.

Saul is 51 years old, a graduate tutor who specialised in Agriculture Education with an experience of over 10 years serving in a Primary Teachers' College. He likes his subject of specialisation and happy with the revised PTE Revised Curriculum.

Ali is 59 years old, a graduate tutor with specialisation in both Professional Studies and Religious Education. He has an experience of over 20 years of serving in different primary teachers colleges. Ali is due for the mandatory retirement from service.

Zuena is 38 years old, a graduate tutor with specialisation in Psychology and Mathematics Education. In the college she plays multiple roles, such as being a Secretary to one of the administrators, a counsellor in the college as well as a tutor. She has had vast interactions with both pre -service and in-service students and can ably explain the advantages of each programme. She has an experience of over five(5) years.

John is 42 years old, a graduate tutor with specialisation in Mathematics Education and has served in the college for over ten(10) years. He is an enthusiastic and dedicated tutor exhibited in his presentations and demonstrations.

Mercy is 58 years old, a diploma holder with an experience of over 30 years of teaching in a primary teachers college. She specialised in Language Education and Early Childhood Education and is the Senior Woman tutor in the college. She can explain and ably talk about the trends and evolvement of teacher education, having been in the different regions of Uganda.

James is 49 years old; a graduate teacher specialised in Science Education and with an experience of less than five(5) years in a Primary Teachers' College. He has spent more time in the primary schools and is still adapting to the operations of a college.

Thomas is 56 years old, a graduate tutor and the School Practice Coordinator in the college. He specialised in Science Education and Mathematics Education and has an experience of over 25 years. Stephen has been to different colleges and regions of Uganda serving as a tutor.

Hannah is 39 years old, a graduate tutor with specialisation in Kiswahili Language. She is the School Practice Coordinator in the college. Hannah has an experience of over10 years as a tutor and had just taken over the role of School Practice Coordinator.

Betty is 44 years old, a graduate tutor with specialisation in Special Needs Education. She is the School Practice Coordinator a role she has served in for four (4) years. Betty has served as a tutor for over 10 years and bonds well with students' especially those with special needs.

The rest of the participants were students selected from the different sampled PTCs and these were; Joseph, Hamidah, Esau and Jacob who are 20 years old while Martha, Agnes and Brenda are 21 years old, Felistus is 22 years old, and is a special needs student who is visually impaired (blind), Immaculate is 23 years old, while Stuart and Dickson are 24 years old. All the selected students were in Year Two and pursuing a Grade III Certificate course in a Primary Teachers' College.

4.2 Application of Constructivist Principles in the Teaching of Students in Primary Teachers Colleges

Observation and interviews were used to gather data on both constructivist principles tutors use to teach students and other aspects of the learning environment, following the rubrics and with the help of audio and video devices. The data obtained was structured according to the themes, as sampled in Appendix 17.

The observation was to note activities, direction of the control and manner of interactions that were taking place between tutor and students while the interviews were used to probe beliefs, comprehension of constructivists teaching and establishing disparities between practice and the theory.

4.2.1 Tutors' and Students' Beliefs on Constructivists' Informed Teaching

The researcher used interviews to establish tutors and students, beliefs on constructivist informed teaching. More of tutors' beliefs were established using an observation protocol and post observation conference (interview), that is, after the tutors' lesson presentations. The study probed participants' beliefs on constructivist informed teaching as a child- centred approach and also established awareness of its principles and practices, particularly the students' autonomy and opportunity to share control of the learning environment. The autonomy would entail making decisions on classroom rules, designing of learning activities, assessment and application. The study also established the manner in which tutors and students cooperated in the planning process.

In an interview, Mercy stated, "… a tutor is like a candle to light the students." In this context, the perception of a teacher is perceived as a source of knowledge whose role is to nurture and provide both support and knowledge to facilitate students' learning. John observed that tutors talk about learner centred methods and even emphasize the same to students, but are reluctant to shift from the traditional art (walking the talk). Ali admitted that he was using the lecture method though he had been advised to engage the learners. Hannah, too, expressed disgust and mentioned "…there are several tutors who assume that students have to be told."

In an interview, Zuena stated "…a teacher is like a farmer who has to care and look after the seedlings (students) until the plants blossom (grow)." In this context, the students were portrayed as pre-mature organisms that need regular teachers' support during the learning process. The implication in this assertion is that without the teachers' support, students cannot learn. Zuena advocates for both learner and teacher centred methods to be employed in colleges to prepare students well, since they need both theory and practice. Zuena argued

"…since training is both theoretical and practical, certain aspects need an authoritarian touch."

On the contrary, James asserted "…our students are mature because they take charge of their own learning when you assign them a task." According to this tutor, students are not mere passive recipients of knowledge, but rather, participants in the learning process. However, the context implies that students are not fully in charge of their learning, since the perception of teachers is that the teacher is the only source of knowledge that students would need for the learning process since they have to determine the tasks.

The researcher, further, interacted with the participants to ascertain their beliefs on the manner and use of learner centred methods. Jacob stated "…we get in groups and learn through discussion, not by being lectured all the time." In that context, Jacob acknowledged the work of the tutors and gave compliment that tutors teach them very well. Esau admitted that tutors plan with them, just like Felistus recalled one event when she was involved in preparations for a seminar. The above findings imply that planning for instruction with students was not prioritised, as this depicts the tutors repository dominative tendencies, and being, fountains of wisdom. Much as participants expressed autonomy during instruction, the concept of involving students in planning seemed queer and not applicable as tutors assumed a perennialists belief that they had the monopoly of knowledge, direction and flow of ideas.

The researcher, further, explored the methods employed in the teaching learning situation in the Primary Teachers' Colleges. When Martha was asked to mention the methods that tutors use when in the classroom, she mentioned that guided discovery was the most common method used where students search for information and present it to the tutors. Esau affirmed "…tutors use demonstration and inquiry, which makes us to remember," while Felistus mentioned "…tutors use discussion method and demonstration."

The narratives from students on this aspect express the need for methods that enable their engagement, as these do not only aid their intellectual growth, but also offer a framework that enhances self- knowledge construction. Mercy believed "…students should be prepared using methods that they can use when in the field." Mercy, further, suggested "…whenever the tutors demonstrate using such methods, then it could be easy for students to emulate what they see."

Saul believed that demonstration is meaningful to students because it acquaints them with what to do in particular situations. Group discussion and demonstration were favourable to students and that is what Thomas suggested "…these methods could shift the tutors' role to facilitator." However, Saul expressed concern "...much as the tutors would wish to use practical methods, it is rather, difficult because of lack of resources and facilities."

These narratives express that tutors do not believe that students' prior knowledge is reliable and sufficient to cope with their preparation, a belief that is traditional.

Tutors' reliance on teacher-centred methods was observed in the lessons that the researcher attended. Tutors defended their use of teacher-centred methods during the post observation conference by claiming that they saved time and enabled students to get good grades in the final examinations. The tutors claimed to be using learner-centered methods of teaching, such as demonstration, group work, conducting practicals, and use of instructional materials. The tutors theoretically justified the use of these methods and varied instructional materials. However, this claim could not be confirmed from the lessons observed. The post-lesson conferences held and observations made did not provide any evidence of the use of learner-centred methods. Tutors, largely, lectured and dictated notes to students and, indeed, rarely used instructional materials.

The study established that it had been a challenging task for tutors to conduct inquiry teaching effectively and efficiently in classroom situations due to tutors' frustration and

confusion in inquiry instruction, misconceptions in students' understanding, lack of resources, and a misalignment between the curriculum and assessment.

The study established that teachers are not willing to explicitly express these beliefs and consequently, it implies the adoption of different methodological approaches to unearth teachers' implicit beliefs. Even though teachers self-reported their teaching beliefs as learner-centred, their teaching metaphors indicated that their beliefs were actually aligned with teacher-centred approaches.

4.2.2 Implementation of Constructivist Principles when Teaching Students

Observations were made (with the help of an observation protocol: appendix 2) when tutors were teaching and, later after the lessons, tutors and students would be interviewed to ascertain implementation of specific constructivist principles. The study probed and verified the traces of different constructivist principles and obtained data on the following; prior knowledge, cognitive dissonance, application of knowledge, feedback, critical voice, enabling environment, and ICT integration.

4.2.2.1 Use of Students' Prior Knowledge

When establishing the use of prior knowledge, the observation was to ascertain whether the tutors teaching in primary teachers colleges can set an instructional context that can arouse the students' spirit of learning, as well as to offer students the opportunities to; access, reorganise, discuss, elicit and correct misconceptions and to resolve lesson problems based on prior knowledge. The study also attempted to establish if the tutors' introductory activities could emotionally and cognitively engage students in that session at hand.

The lessons observed rarely touched real life situations and neither was any probing of students' experiences related to the content. However, when interviewed, some tutors understand that all teaching starts with the knowledge base of the teacher. The tutors say they consider students prior knowledge in every lesson and on observation, it was realised that this

is limited to review of the previous lesson. John firmly stated "… it is very hard to teach what students do not know therefore we dwell on what they know best." Saul, Jacob and John concur that students' prior knowledge is important when teaching to enable its reorganisation or reconstruction. This implies that, to have an effective teacher preparation, tutors require a comprehensive preparation tailored to student teachers' prior knowledge so as to equip them with sufficient content security and freedom.

John believes in discussing prior knowledge, eliciting and correcting misconceptions as well as resolving problems basing on what students know. John mentioned that;

> Prior knowledge is needed where we touch real life experiences. We must always build on what they know. When we (tutors) give activities, we begin with what students know, then, we build on it. Hm…We ask them questions to check what they know and base on that to teach or correct them.

The above narration implies that from a constructivist point of view, use of students' experience is key to enabling students' knowledge construction as they tend to think and build on what they already know. However, Mercy was contrary on the relevance of prior knowledge with an assumption that, "…students do not have prior knowledge of the content I teach." Mercy mentioned "…I teach students like they have not known this subject." This narration implies that the lesson development is entirely at the tutor's discretion and depicts both the traditional mentality and fixed mindset which maintains the teacher in a repository and authoritarian position. The respondents expressed views that, although the PTCs entry qualification was raised, several students depict uncertainties with shallow knowledge that does not represent their O-level results. This was justification for not considering students' prior knowledge.

4.2.2 2 Enabling Cognitive Dissonance amongst Students

The study attempted to identify if students could distinguish between prior and new knowledge while pointing out misconceptions. Cognitive dissonance is created when students expose their own misconceptions, rather than having the teachers to point out the misconceptions for them. In so doing, students have the opportunity to elaborate differences between prior knowledge and new knowledge.

During presentations, students would point out what they knew before and the misconceptions which were presented to the tutors to approve or nullify. The students were searching for information from books in the library, and basing on those facts with the assumption that knowledge is found in books. According to Zuena, "…the tutor is a facilitator and the modules have the information." Zuena believes that the modules tap real life experience and, therefore, she prefers sending students to the library.

Zuena's narration implies that availability of books is sufficient to make students knowledgeable but this falls short of the constructivist aspiration of knowledge construction, aware that reality is fluid and can emerge from multiple sources. However, some respondents had different views like Felistus who believed "…each student has some experience and knowledge" and also felt that "not all knowledge is found in books." In support, John believed that knowledge was everywhere and could be found for use in creating new knowledge. These two narratives depict that these respondents comprehend the constructivist view of truth and a world of multiple realities. The books simply provide the cues on which knowledge unfolds for either assimilation or adaptation. However, on scrutiny of the modules, they were prepared in a dialogical and constructivist manner, except that students rarely follow the in-built instructions.

Brain storming was too minimal and, for the sessions observed, this domain, if any, was not common, in that both tutors and students rarely give it attention and yet cognitive dissonance

marks the beginning of new learning. It was observed that students read just to reproduce what they cram and prepare for examinations. They rarely reflect on this knowledge to develop it further to levels of demonstration of creativity. Even Karl Popper was against the objective knowledge stored in books and libraries. Karl Popper argued that such knowledge was of value only when understood and used by people.

During students' presentations, the researcher observed that tutors kept fortifying their position of authority as their role was simply to approve or disapprove whatever was presented in the plenaries. This perpetuates both dominance and traditional mentalities which give an impression that the tutor knows it all. It also implies that these tasks that keep students in the library become a barrier to their critical and creative thinking, vesting them with a belief that all knowledge is objective and found in books. Constructivist tutors do not assume authority to simply refute students' submissions because they understand that knowledge is subjective and also believe in a world of multiple realities.

4.2.2.3 Enabling Students to Apply Knowledge

Observation was used to ascertain how students were being helped to apply knowledge. The researcher, thereafter, interviewed respondents to establish their perspectives and usual classroom practice. The study established how students demonstrate the use of their current and previous knowledge to answer questions or solve problems. This domain of application incorporates both formative and summative assessment. The tutors would assign tasks and students would refer to their lecture notes and information gathered from the libraries. Students believed in using past papers to guide their reading and research with an assumption that question items recur.

The researcher established how students demonstrate the use of their current and previous knowledge to answer questions or solve problems. The researcher observed that the responses on application of knowledge were mainly focused on preparing for examinations and most

students believed in using past papers to guide their reading and research with an assumption that question items might emerge one time. This implies that preparation of teachers was more theoretical than practical, a situation that depicts perpetuation of idealism in colleges. Application of knowledge would be an impetus for practical work, inventions, and creativity, which constructivist focus seems to be lacking. The emphasis is more on theory and how to attain good grades than practice.

4.2.2.4 Feedback in Instruction

The observation method was used to establish feedback in instruction and it focused on the nature, quality and flow of feedback in the classroom, especially, to an individual student or group of students. The study also ascertained whether feedback was reciprocal with opportunity for students to provide feedback to each other. The students felt empowered with the opportunity to give feedback to their tutors. In some instances, the feedback, was prompt and guiding while sometimes it was direct. The study established that, in some instances the flow of feedback is irregular and assumed. This was realised when Immaculate pointed out that "…most teachers gauge their performance basing on students' papers. The teachers constantly move around to identify what students do and get feedback through student's scores." This meant that students' performance is a direct reflection of a tutor's effort. The tutors in some instances got feedback on their presentation from the students, just like Esau asserted "…tutors give us an evaluation checklist to track feedback on their presentation." The narration implied that tutors appreciate remarks and comments about their lessons, which aligns with the constructivist belief that a teacher at the same time can be a learner. The reciprocal feedback enhances the *critical voice* within the teaching- learning situation. However, during presentations, the researcher observed that, while tutors demanded that students should properly use the questioning technique, several of them were not conversant with the questioning technique.

Despite the shortcoming in tutors' observation of the questioning technique process, this aspect, according to the findings, exhibited several constructivist traits, such as interaction, involvement, indirectness, collaboration and cooperative learning. Mercy observed "…many tutors do things hurriedly and simply treat some practices as mere formalities without knowing that it has counter modeling effects." Mercy reported "…tutors come, teach and go," which means that the tutors do not have time for students and, in most cases, they do not have time for giving any feedback. The narration implies that some tutors are too formal, businesslike and seem not to spend any time on any informal activity, which contravenes the constructivists' conduct, such as collaboration and engagement.

4.2.2.5. Dialogue and Critical Voice in Instruction

The study probed the nature of negotiation and opportunities for students to express themselves before peers. Observation and interviews focused on students' exchange of ideas and opportunities to articulate and reason in any given situation. This theme projects both engagement and collaborative learning as students get to work together to solve a problem, create a presentation, or derive meaning from a given lesson. The study focused on opportunities for students' dialogue and discussion in the classroom. The study established whether students could talk and explain to one another. Dialogue and discussion were common in colleges as many tutors opted for group work, which was a constructivist practice. The researcher found out that students had opportunities for collaboration, dialogue, negotiation and discussion in the classroom. The students were free with one another and expressed high interests in activities that caused them to work in pairs or groups, especially, when there was minimal tutor intervention. On group discussions, the students accepted that dialogue was necessary for them to understand well. Jacob, on class discussion, stated "…the friends are helpful to correct mistakes in the presentation."

Peer learning was liberal, indirect without any tensions, unlike the formal learning sessions. The students got opportunity to learn from one another, made productive arguments, and understood consensus. Joseph concurred that:

> You get information from each person that has information and any other source and we combine them, we get the final submission. It has helped me because sometimes if you are doing something individually, you can get a limit of what could be such an important role. As a person contributes, we get to know different and different perspectives.

The researcher witnessed that almost every tutor uses discussion, which gives students an opportunity to discuss learning in groups. This manifests dialogue, shared voice and consensus. John affirmed that group work and discussions were common in most instruction, when he stated that, "… I create contexts where students set questions and, later, search for information; by the way, even other tutors prepare tasks for the groups." This implies that students get to groups to respond to the tasks set, which is directional. However, constructivists prefer setting a situation that pools multiple views and perspectives. The students are given opportunity to discuss learning as a whole class, especially, when the groups convene to share what each small group has through plenaries. The tutors use the opportunity to supplement and make additional contributions to fill in what each group might have omitted. Betty was in agreement when she said that, "…basing on students discussion and presentations, I establish what students have been able to search in order to see what to fill in so that the students own their learning."

This narration implies that students present and discuss ideas exactly from what they have read, which is a barrier to knowledge construction. The constructivists would desire to observe contexts when the knowledge can be put to use or identifying additional views on what is entailed in books. Felistus affirms "... in groups of 25, tutors give students questions

to handle." However, Mercy observes that many tutors use this approach to relax and let students do things at discretion without making or giving any technical input. Mercy, further, expressed concern that,

> …it is unfortunate that many students do not like reading and searching for information; so, sending them to the library is a waste of time. When tutors just tell students to read on their own leaving everything to them.. eh and just give them questions, ah The students are negative on reading as they have a poor reading culture.

The narrations imply that knowledge is found in books, and failure to read simply means ignorance, which is an assumption of most tutors. Perhaps, a lot of time is wasted pushing students to the library and enforcing a culture that is not tailored to their needs.

When assessing students' input, discussion and presentation in plenaries, tutors observe the nature of dialogue and presentation of ideas and arguments. Tutors believe that this arrangement contributes to a student's knowledge base and general presentation. Saul stated as follows:

> We allow them (students) so they can explain to one another. We give group work to develop students' communication and collaboration. Whenever the students work together, it enables them to create knowledge, promotes interaction as well as peer learning. Students, too, see the relevance and liked this approach. Joseph

admitted that, tutors encourage them to get involved in discussions with fellow students. These narrations project the benefit of cooperation, teamwork, dialogue and collaboration, which are highly treasured by constructivists.

Constructivist teaching is purely learner centred and demands several indirect approaches that involve or engage students in the teaching learning process. The experience of the participants on constructivist teaching is limited to group work. Saul assumed that putting

students in groups was demonstration of constructivist teaching because of the opportunity to share information. Ali, too, concurred with Esau who asserted "…when you let students to search for information in groups and they present with minimal tutors' interruption, then one is practising constructivist teaching." Ali mentioned that they often ask students to search for information in groups and, as they present, tutors guide them.

Though the respondents state that group discussions are more meaningful and motivating. On the contrary, Mercy was not happy with the way some tutors handle students, especially, as they present in the plenaries. Instead of supporting and encouraging them, they undermine students' effort through making demeaning comments, like "…is this what you have read and found out?" The narration depicts the authoritarian traits of tutors and the imagination that learner centredness simply means letting students to do everything on their own as tutors just move around to compare with what they know. Constructivists engage learners to support and ascertain progress in a more collegial manner.

The researcher also observed the learning activities to ascertain if they embedded any problem-based component and if at all the sessions had discussions on real-life situations, or were relevant, engaging, and motivating. The observation was that, the practical bit was too limited, as the teaching was focused on helping students to perform well in the examinations. Saul admitted that practical work was limited and gave an excuse that it required more practical or hands-on- skills.

The narration is explicit that tutors do not have time for practical work, as they prefer theoretical presentations which enable students to pass examinations. The learning activities could rarely stimulate reality and, apart from students searching for information from books in the libraries to enable them to answer set questions in the different subjects, tasks that require problem solving were minimal. Although students were given the opportunity to obtain, record, and organise information through self-determination and regulation, less effort

was being put in helping students to be creative and to imagine beyond content in books. Saul, who believed that available resources and modules can give the necessary knowledge, stated that:

> The tutors have been struggling a lot to look for the information. The tutor is a facilitator and the modules have the information. These modules tap real life experience. I told them (students) that the books are in the library. I told them I want to see notes for each person. I told them that is part of the course of coursework. So they make their own notes. Then, when we meet we discuss and go through the notes; so, each group presents like that.

Contrary to what Saul believes, Felistus believes "…not all knowledge is found in the books and the modules are mere guides, just like any piece of work and I think there are omissions that need to be filled in by further research."

The narrations express a feeling that modules are a solution to the learning in a college since the setting of examinations is entirely based on the modules. Constructivists would see this as a barrier to knowledge construction and creativity. However, some respondents comprehend that knowledge is not only accessed in books. The researcher found out, that through the group activities, students have the opportunity to cooperate and collaborate as they discuss and can access variety of resources and perspectives during the plenary sessions. There is need to help students to develop scholarly arguments based on evidence, rather than merely seeking the right answers.

In the first interview, when respondents were asked to explain how they make their teaching meaningful and what they understood by relevance, in response Saul explained, "We (tutors) are strict with curriculum implementation because that is where the examination will come from." Saul later clarified that the tutors put in efforts to relate to real life situations and allow

the students to obtain first-hand information from resource persons in the community, when he expressed that:

> There is a chance for them to learn from things outside the college. We take them out, especially, to agriculture shows. We take them for the whole week and they see things there that are displayed. They share with the farmers. So, I feel that is information which is good from which relates very well with what they learn from here.

Esau, in support, explained that, "students go outside the college to learn like visiting the farm to learn Agriculture." On relating instruction to what students know, Esau admitted, "Tutors introduce lessons and try to find out what we know."

In an interview, the researcher further probed on the help given to students as to enable them realise that what they learn is useful to their entire life even when they leave college. When relating experience of what students learn and the likely experience to encounter after college, Saul believed that the instructional materials in the college, particularly the modules, were designed and adapted to real life situations and, in response, affirmed that;

> The way modules have been designed, they bring real life experience, especially, in agriculture. They bring real life experiences because, for example, there is where we discuss issues pertaining to the teaching of Agriculture in both colleges and primary schools, and we discuss problems affecting farmers in Uganda and such other things.

4.2.2.6 Reflective Practice in Instruction

On establishing the implementation of reflective practice in teaching, observation and interviews were used. The researcher focused on the flow of feedback within the classrooms. The study revealed that tutors rarely get feedback on their teaching performance, and of all constructivist practices, reflection did not feature and yet in modern teaching practices, it

vividly improves both individual and group performance. The tutors, in some instances get feedback from the students on their presentation as tutors, too, give feedback.

When observing the use of reflection in classrooms, the study attempted to establish whether students have the privilege to act and think about their actions. The researcher, further, sought tutors' perception and practice of reflection. Neither the tutors nor the students have any form of structure to follow when reflecting on sessions. The experience of this practice is limited to the component of self-evaluation on lesson plans where tutors are not aware that reflective practice is a structured formal and routine activity in modern teaching. This was evident in what Stuart explained, "They always comment on their lesson plans and, thereafter, go over what they have done as a way to improve their performance." Further still, in an informal way, Martha expressed that she makes personal reflection, especially when her memories run back to recall the good moments that also spends time meditating whenever she is in the wrong.

The researcher noted that students do not have the privilege to act and think about their actions. The researcher observed that, reflection as a constructivist activity is not a common practice in Primary Teachers' Colleges. The narrations portray that reflection is not a popular practice as the respondents are focused on outcomes of group discussion with minimal focus on what happens to individuals in meaning making, much as reflection enables the learners to try things out on their own, realize mistakes, correct their own mistakes, as well as take note of what they have done to reach a conclusion.

The researcher found out that individual, group, and whole-class reflection was not evident as tutors and students focused more on what to present and assumed that there was little to reap from what had already been done. There were excuses of lack of time as, expressed by Mercy.

4.2.2.7 ICT Integration in Teaching Students

On integration of ICT in instruction, tutors expressed the fact that it is mildly evolving as both tutors and students see its relevance. John revealed that, in case of uncertainties and misconceptions, with the Internet, all required information can be availed. John believed that, "just a clique on Google gives robust information." Saul reported that the Internet in colleges and permitting students to have phones in colleges had enhanced their research and sharing of information. Saul asserted that:

> Especially now with the digital age, we realise they are also now making research, using the system. Students apply some technology, like they have started using phones. Students can Google (Use the Google search engine) to get any information they want.

Jacob concurred "…using the smartphone to research facilitates obtaining information that cannot be found in textbooks." The integration of ICT is a constructivist practice that enhances students' engagement, research, critical thinking, and creativity. The integration of ICT in instruction is evolving and gradually unfolding as both tutors and students see its relevance, particularly in the COVID- 19 period. The colleges have Internet which is intended to enable tutors and students to access information. Students use the computer laboratories, as well as their phones, to search for information. However, the levels of ICT integration, from a constructivist point of view, are very low as the tutors and students just do surfing on the Internet instead of using it as a platform for further engagement in research. It was observed that students spend more time on E-mails, WhatsApp, Facebook and other online platforms which they find free when they use the college Internet. The tutors, too, lacked digital literacy and fluency and, therefore, could not cope with the current global pace of using ICT in teaching and learning.

The study, further, established the tutors' and students' roles. Tutors are aware of the instructional shift and changes in the teachers' role, especially in a constructivist setting or environment. This implies that the tutors are aware of the different roles a teacher assumes and many would opt to be facilitators, mentors, counsellors, parent substitutes and coaches. The reality on the ground, according to the research finding, is that some tutors try to be facilitators but, given the conditions of limited time, the overcrowded curriculum, examination pressure, the large numbers as well as lack of resources, they are compelled to be instructors using the traditional knowledge transmission methods which is contrary to constructivist tenets.

4.2.3 Teaching Disparities from the Constructivist Theory

Cognitive Constructivism theories of Brunner (1961) and Piaget (1972) argue that the learner is not 'tabula rasa', and so the learner's knowledge and understanding need to be taken into account. The focus in these learning theories is on how knowledge is constructed rather than how it is acquired, because noteworthy teacher growth can never be based on transmission or delivery of facts and information, but on active learner participation. Knowing that prior knowledge is relevant for assimilation and adaptation in knowledge construction is not enough. Constructivist tutors need to demonstrate the practice by tapping students' experiences by use of authentic settings and examples to enable students to carry out self-knowledge construction.

4.2.3.1 Perspectives on Sources of Knowledge, Tutors' Roles and Teaching Methods

On sources of knowledge, the interviews checked for students' opportunities to understand that any truth can be doubted and that knowledge is evolving and changing due to social and cultural development and diversity. A section of students felt tutors' superiority and regarded them to be a source of knowledge. Felistus stated "…the tutors are authorities who are acquainted with the curriculum and can solve any problem." According to Saul, the

traditional mentality of taking teachers as superior and fountains of wisdom among students continues even when there are changes in approach. Saul mentioned that:

> Our students have in mind that everything should come from the tutor. So the teacher is the source of knowledge and this issue of a tutor being a facilitator is something we are trying to bring in. Hm…we are just trying to use that approach.

The narrations have an indication that some students perceive tutors as authorities and fountains of knowledge. However, Thomas observed that the modes of teaching and roles of a teacher are changing and that any modern teacher has to minimise the traditional perspectives of teaching and also added that the current century demands a shift from telling to facilitating students. According to John, the tutor assumes the role of a facilitator because knowledge is no longer an individual possession, but it spreads all over in a world of multiple realities. The books do not contain all knowledge and, therefore, there is belief in knowledge construction or creation.

On the contrary, Mercy assumed that students who join the colleges are generally weak and do not have prior knowledge on most aspects of the PTE course and, therefore, she prefers to tell them using lecture. Mercy assumes that students rarely have prior knowledge on the subject content and, therefore, need to be told. Mercy, further, claimed that, "several tutors pretend that they are employing modern ways of teaching and yet they dictate notes to students, use lectures, as some simply give the course outlines." Mercy added that:

> I think many tutors are still traditional. I don't think they fully understand how to adapt constructivist teaching or constructivism, so they are still lecturing and drilling students, not really allowing students to learn themselves by discovery but more they feel that they need to have to teach in order for students to actually get information. They are teaching in a traditional way and they are not even willing to try and teach in a new way.

The study, further, probed the limitations of subject knowledge and attempted to establish the knowledge of different subject areas that could be questioned or doubted. The majority of the participants believe in objective truth rather than multiple truth and subjective realities. The main assumption is that the libraries and books contain knowledge. The students perceived the tutors as superior experts full of knowledge and wisdom.

The narratives manifest the different perspectives of the participants on the sources of knowledge, role of teachers and the methods of teaching. The researcher found out that tutors and students believe that knowledge is found in books and, much as tutors claim to be learner-centered, practically, they are teacher-centered and execute direct authoritarian teaching methods.

On probing whether students learn that knowledge and realities have changed over time, John stated "…there is need to explore and set situations that enable students to derive concepts on the understanding that we live in a world of multiple realities." John, further, agrees that, "knowledge changes and cannot remain the same, as recorded in books." The narratives imply that people comprehend and apply the same knowledge in diverse ways to solve emerging problems. In support, Felistus affirmed "…knowledge changes and cannot remain the same." However, on the contrary, Thomas insisted that, "without books students cannot get things right." Thomas believed in students' personal study and research in the library that it makes syllabus coverage faster, as students go over what they can comprehend and only refer topics that seem difficult to their tutors for guidance. Thomas had this to say:

> Often students do research. Mm hmm. So, in other words, they share with tutors. And the students do share the subjects. There are specific topics for the tutors and specific topics for the students. The students present their part and, later, tutors also handle their part.

When establishing the extent of use of inquiry method to teach students, John believed in setting and assigning tasks to different groups for research, discussion and presentation. The assumption here was that whenever they assign work to groups, the students search and get information on their own which made their teaching learner-centered. Joseph affirmed "…sometimes tutors ask questions that make us think much harder." These narratives express the feeling that group work enables students to gain knowledge. However, it is, rather, difficult to ascertain that each individual in a group contributes.

The above narration implies that the tutors interacted well and were free with students. According to Saul, some students asked questions but, because of the traditional orientation, he observed that sometimes students are timid and, quite often, need encouragement to open up. Martha affirmed "…tutors have good relationship with students and when they make errors they accept their mistakes and make amendments in their work."

Tutors' feelings towards students' questions was probed and at the same time students, too, were probed on how they felt whenever they ask questions. Esau, was comfortable with consulting tutors whenever he experienced any difficulty. Esau voiced "...I always go to tutors for consultation whenever there is a difficult question." Joseph affirmed "…tutors are friendly and welcome students to ask questions and often demand for clarification in case of ambiguities."

The researcher found out that students can comment on the tutors' presentations, particularly how they comprehend. In some colleges, students are given a feedback form so that tutors get to know where to improve. According to Felistus, "…tutors issue an evaluation checklist to track feedback on their presentation." Esau concurred with Felistus that tutors gave them support whenever they were in need and, similarly, they followed up students who needed assistance.

The narratives manifest a critical voice in the learning environment, as well as traits of collegiality in the teaching learning context. The study, further, assessed the instructional climate, particularly rapport and also established participants' self-determination and expression in class, such as questioning tutors' instructional content and methods or asking questions about what they studied or anything relevant in appropriate and beneficial ways. The students expressed the fact that they were free with the tutors and could inquire on anything during formal time, which is a constructivist practice. According to Felistus, "…the tutors were friendly and helped to show me what to do through demonstration which has made my learning easy." However, the researcher observed that there was a controlled student teacher relationship as students were not free as they expressed.

4.2.3.2 Assessment of Students

Using observation and interviews, the researcher established the different ways students are assessed during the course. The researcher observed that colleges are focused on helping students to score well in the final examinations. Tests and School Practice grades are used for assessment. Tutors are not familiar with assessment such as; anecdotal, peer assessment, oral presentations and portfolios.

The tutors are focused on what is entailed in the curriculum and examined. Saul was specific on this matter and stated "I am more focused on syllabus coverage and preparing students for examination." Saul's assertion implies that he does not use constructivist methods. The researcher found out that the competition amongst colleges has weakened teacher preparation as much attention has shifted from other vital preparation activities to helping students to excel in the examinations. The students, too, are happy when they are helped to pass their examinations. The assumption is that when familiar examination items are set and happen to appear in the final examination, then tutors have done a good job. Students' competence and

professionalism are gauged by the scores they attain in examination's practice. Joseph, who happened to be scoring well in the previous tests was happy and had this to say:

> Tutors have contributed to my success. They do this by giving us continuous assessments and encouraging us to get involved in discussions with fellow students. Whenever I discuss with my friends I get to understand things that have been confusing me.

This implies that the trend of competition and tutors' efforts on enabling students to pass examinations is a barrier to implementing constructivists' assessment. The constructivist evaluation emphasizes the evaluation of the process, progress and the product of learning while the students are at work and during the whole session. The constructivist approach to evaluation is subjective. Constructivism does not look forward to uniformity in evaluation as it takes into account multiple perspectives presented by students, which include: anecdotal, oral presentations, peer assessment, project work, portfolios, and simulation. The tutors have a task to transform students' engagement in content from rote recall and comprehension to more meaningful analysis, synthesis, application, and evaluation via constructivist teaching models and methods.

4.2.3.3 Challenges of Implementing the Constructivist Principles.

On scrutiny of the tasks given to students, the study established that the tutors were giving less to students, but were expecting them to think more and construct their own knowledge. The researcher found out that tutors have inadequate awareness of constructivist informed teaching, knowledge construction and applicability of constructivism on many of the concepts. Many tutors have experienced a traditional instruction orientation and background which strains their adaptation to emerging shifts in teaching. This has been manifested in the difficulty in assuming new roles (facilitator), integrating ICT in instruction and taking on reflection as a major constrictivist practice.

There are challenges in translating constructivism as a theory of learning into viable instructional strategies that can illuminate this epistemology for student teachers. There is difficulty in translating a theory of learning into a theory or practice of teaching: that conversion has always been difficult to many teachers. The usual assumption on the Constructivism Theory is that it is applicable to learning only, an impression that many do not realise to the effect that learning cannot exist on its own without the component of teaching. Teaching and learning are reciprocal processes. Therefore, the success of a constructivist teaching does not only depend on the learners' participation, but also relies on the tutor's application of constructivist instruction.

The researcher observed a challenge facing tutors of lacking the opportunity to learn from colleagues, particularly, in a setting where there is a structure and protocol for revealing excellent teaching practices and having a group of professionals discuss as they learn from them. Reflective practice is not only informal and haphazard, but also many tutors have not realised its benefits.

4.2.4 Interpretation of the use of Constructivist Principles in Instruction of Students in Primary Teachers' Colleges.

It is the teacher education programmes which hold the responsibility of preparing teachers, hence, it becomes the accountability of teacher education programmes to instill these skills in our teachers through both pre-service and in-service education. By acting as role models and by expressing teaching values, tutors are likely to have an impact on student teachers, which may have an effect on the unseen children (the primary school pupils they will find in schools).

During the course, students are 'learning to teach' and 'teaching to learn.' For constructivists, students are co-participants in the construction of meaning. This decenters the role and importance of the teacher, and puts more focus on the learner as a knowledge-builder in context. Constructivist teachers are learners themselves who understand the Theory of

Constructivism, strategies, and techniques that combine social and cognitive learning methods. The interpretation therefore, will align with the constructivists' learning environment and principles during instruction.

Becoming a constructivist tutor may prove a difficult transformation, since most tutors were prepared for teaching in the traditional, objectivist manner. There is an urgent need for a paradigm shift that will require the willing abandonment of familiar traditional perspectives and practices to adopt new ones. Constructivist theories play a critical role in the processes of learning and cognition based on the notion that learning is an active process of constructing knowledge, rather than acquiring knowledge, and that instruction is the process by which this knowledge construction is supported rather than a process of knowledge transmission.

Constructivists encourage teaching that is based on students' prior knowledge for easy knowledge assimilation and adaptation. However, the respondents expressed views that, although the TTIs' entry qualification was raised, several students depict uncertainties with shallow knowledge that does not represent their O-level results. For example when Mercy stated that "these days we get students who have very good results at O-level but when you look at what they do here..eh..eh.. you may think that those results belong to someone else." This was justification for not considering students' prior knowledge.

The researcher observes that tutors kept fortifying their position of authority as their role was simply to approve or disapprove whatever was presented in the plenaries. The tasks that keep students in the library become a barrier to their critical and creative thinking, vesting them with a belief that all knowledge is objective and found in books. The majority of the participants believed in objective truth, rather than multiple truth and subjective realities, just like Stuart stated: "We rely on what is written in modules. The modules help us when discussing and approving facts in our discussion. In case we fail to get the answers, we just

go to the tutors" The students perceive the tutors as superior experts full of knowledge and wisdom.

The researcher observed that most students believe in using past papers to guide their reading and research with an assumption that the question items might emerge one time. Besides application of knowledge and its transfer to manage emerging problems, the tutors' and students' focus is on how to pass examinations. This has turned the preparation of teachers to be more theoretical than being practical a situation that depicts perpetuation of idealism in colleges. Ali mentioned that "I have to protect my job because when results come out and things (results) are not good, my bosses automatically will not see the other good things I do here and will allege that I am not working." In order to create enlightened teachers, there is need for teacher preparation that is designed for more than examinations and certification.

In some instances, the feedback was prompt and guiding while sometimes it was direct. The researcher observed that, while tutors demand that students should properly use the questioning technique, several of them are challenged with the questioning process. The questioning process (ask, pause, choose, listen and provide feedback) is not effective in the Primary Teachers' Colleges. In one observed lesson, James kept naming students before questioning, for example, "Susan, What are resources?' This made other students reluctant, while those selected exhibited tension. The questioning process enables listening with the mind, as well as the development of knowledge building, reflection, critical and creative thinking.

Reflection as a constructivist activity is not a common practice in colleges. Neither the tutors nor the students have any form of structure to follow when reflecting on sessions, for example Zuena asked "What is reflection for and where is the time?" If reflection was taught and made a formal practice, students critical and creative thinking would be both enhanced, leading to self- knowledge construction. The study reveals that tutors rarely get feedback on their

teaching performance and, of all constructivist practices, reflection does not feature and yet in modern teaching it vividly improves both individual and group performance.

The students expressed the fact that they are free with the tutors and can inquire on anything during formal time, which is a constructivist practice. However, the researcher observed that, there is a controlled student teacher relationship as students were not free as they expressed. There were opportunities for students' collaboration, dialogue, negotiation and discussion in the classroom. The students were free with one another and expressed high interests in activities that caused them to work in pairs or groups, especially when there was minimal tutor intervention. Dickson mentioned that "We grasp faster when working in groups. The friends try to help by explaining things that I don't know." Dialogue and discussion were common in colleges as many tutors opted for group work which was a constructivist practice.

Planning for instruction with students is a new concept that tutors take as not being necessary for example, John inquired " What can students suggest for my lesson?'' This depicts the repository dominative tendencies and the feeling of being fountains of wisdom. Much as participants expressed autonomy during instruction, the concept of involving students in planning seemed queer and not applicable as tutor assumed perennialists' belief that they had the direction and flow of their presentations.

The tutors claimed to be using learner-centred methods of teaching, such as demonstration, group work, conducting practicals and use of instructional materials. The tutors theoretically justified the use of such methods and instructional materials because tutors largely lectured and dictated notes to students and, indeed, rarely used instructional materials. It was also a challenging task for tutors to conduct inquiry teaching effectively and efficiently in the classroom.

Constructivism does not look forward to uniformity in evaluation as it takes into account multiple perspectives presented by students. The constructivist approach to evaluation is

subjective and emphasizes the evaluation of the process, progress and the product of learning while the students are at work and during the whole session. The trend of competition and search for grades has channeled tutors' efforts to enabling students to pass examinations, which was a barrier to implementing constructivist assessment.

There is a challenge facing tutors of lacking the opportunity to learn from colleagues, particularly in a setting where there is a structure and protocol for revealing excellent teaching practices and having a group of professionals discuss as they learn from them. James concurred that:

> We rarely have free time to see how other tutors teach because everybody here is busy or doing something else. For me, when my lessons are done, I just prepare to go home. If there was opportunity to share recorded lessons then that would serve."

Recorded lessons for analysis and feedback would serve, being constructivist practices, and that is if the tutors had some ICT and digital orientation. The levels of ICT integration are very low as the tutors and students just do surfing on the Internet and use of phones.

The tutors are aware of the different roles a teacher assumes and many would opt to be facilitators, mentors, counsellors, parent substitutes and coaches. The reality on the ground is that some tutors try to be facilitators but, given the conditions of limited time, the overcrowded curriculum, examination pressure, as well as the large numbers and lack of resources, they are compelled to be instructors using the traditional knowledge transmission methods.

4.3 Constructivist Practices during the School Practice Supervisory Process

The study established the constructivist practices applied to the School Practice supervisory process in Primary Teachers' Colleges and attempted to establish how tutors (supervisors) apply and use these practices to promote students' performance in school practice. The researcher used observation, interviews and document analysis to obtain data on tutors'

beliefs on clinical supervision, implementation of constructivist practices in supervision of students, tutors' supervisory behaviour disparity from the Constructivist Theory.

4.3.1 Tutors' and Students' Beliefs on Clinical Supervision

The researcher used observation and interviews to establish the supervisory process and models being used in the colleges. Much as it appeared to be a corporate model, the tutors insisted that they use clinical supervision. The interviews dwelt on clinical supervision to align their views with their lived experiences. John insisted that he uses clinical supervision and Thomas affirmed that, "Tutors practise clinical supervision and observe its cyclic process from pre and post observation of the lessons." On the contrary, Mercy observed "... some tutors don't know supervision, particularly those who had been recently posted to the colleges. They have a secondary school orientation and training that even if they go to supervise they cannot sit to conference with students." This was evident when James was probed on clinical supervision and asked, "What is clinical supervision?" These narratives indicate uncertainties in the use of clinical supervision. Although the tutors expressed the fact that they had studied and know what clinical supervision was, they were unable to use such knowledge, as John voiced:

> We know what clinical supervision is and we understand it, but we are unable to use it to supervise our students because what goes into it is very tedious and involves a lot of time and preparation. With the big numbers we have here at college, it is practically impossible.

In support James added:

> We learnt about clinical supervision at University and we know that it is good and have to use it, but we cannot use it in our colleges because the process is quite involving. Clinical supervision is a good model of supervision, as emphasized in our various trainings, but we cannot use it because we are given a long list of names for

> students to supervise aware of the big number of students and yet the process needs time.

Betty supported the responses raised above, stating that:

> It takes a long time and several days to use clinical supervision on a single student in a particular practising school and yet we have to supervise more teachers in the same practising school as well as several other practising schools. We are given few weeks for School Practice which period is not enough to do all that.

The narratives implied that clinical supervision was not easy to implement due to several factors, like the lack of time, big numbers of students, limited resources, personal problems and other unspecified conditions in colleges. The responses above were corroborated by the School Practice coordinators in the colleges. Hannah conceded that supervisors were unable to use clinical supervision, as required of them, with excuses of time and large numbers of students to supervise.

Besides the excuses advanced by the respondents, the failure to use and implement clinical supervision was due to lack of knowledge about it and its protocol, as was expressed by Mercy. Betty was, somehow, contrary when she stated, "… some tutors when they go to the field, they do not know exactly what to do." Betty assumed "…some tutors know and understand what clinical supervision is about, but simply did not want to use it." On clinical supervision, Hannah mentioned "… a few tutors follow and understand what is expected of them, while many do not use it at all." On the contrary, Ali expressed himself strongly that, "tutors do not follow the clinical supervision process" and mentioned that during School Practice, "No tutor holds a pre – observation conference." However, John, as an individual tutor, insisted "… I follow the clinical supervision procedure right from the pre-observation meeting with teachers and up to the post observation meetings to discuss teachers' performance."

The narratives explain that many tutors do not observe the clinical supervision process. The researcher found out that many young tutors just know clinical supervision in theory, but did not have proper practical grounding while at University. It was also observed that with the many Universities offering education courses, the graduates who come out have varying experiences even to the extent that the component of supervision was not at all or was loosely handled.

4.3.2 Implementation of Constructivist Principles and Practices in Supervision of Students

The study explored the application of constructivist principles and domains in the supervision of students on School Practice. The researcher used observation and interviews to obtain data on the supervisory behaviour and on selected constructivist domains as follows:

In the first instance, the respondents were interviewed to establish their supervisory behaviour. PTC students reported that supervisors never inform them about their visits. Students stated that the supervisors never carry out pre-observation conferences with them. Esau explained "… tutors just appear at the door and when you express that you are ready, they get in to supervise the lesson." Martha concurred with Esau when she said, "… when on School Practice, tutors just surface without notice."

These narratives imply that the supervisory behaviour in the colleges is neither collegial nor collaborative the supervisors tend to exercise authority and some exhibit unprofessional conduct. Mercy observed and stated that:

> Imagine some tutors write their comments on students' lesson plans. One time a tutor wrote comments demoralising a student. A tutor asked a student to write her own supervision sheet, which is not professional. They just do things quickly and go. We don't know what has happened to the tutors qualifying these days.

The narrative reveals unprofessional conduct in the supervisory process where tutors need to be guided on how supervision of students on School Practice is carried out. Constructivists clarify on the roles of a supervisor and strongly advocate for clinical supervision.

Students and tutors were also interviewed to check on how they consider prior knowledge in School Practice activities. Jacob believed that everyone keeps accumulating experiences and knowledge from childhood which enables both adaptation and assimilation. Jacob mentioned that;

> Of course they (tutors) have to know that we know something. Since we have been studying since we were children. Before we know something, they come to talk to us in a way so that we can improve. We have ideas on some things; as for me, I have a brother who is a teacher.

The narrative affirms that everyone has prior knowledge which should serve as a basis for adaptation of new knowledge. The constructivists emphasize the use of learners' prior knowledge. However, tutors feel that their students know little or nothing about teaching and expect them to be receptive to whatever suggestion they make.

When respondents were probed on negotiation, the students felt that tutors are an authority and that they simply have to wait for their instructions, as tutors act at discretion without students consent. When tutors went for supervision, they would just emerge with lists of specific students assigned by the School Practice coordinators and entered students' classrooms. Joseph affirmed "… it is rare to see tutors planning lessons with students when preparing for an observation session." Instead, they just see tutors at the schools and classroom doors already set for supervision. Felistus, too, concurred that, "We do not plan with tutors; instead, they just come here at school and we receive any tutor who comes."

The researcher observed that tutors take a superior role and do not plan with students nor hold any pre observation session, as required in clinical supervision. Ambushing students was not

a constructivist practice. Constructivists believe in negotiation, which enables the students and their tutors to interact and agree on a number of things related to teaching before the actual session and after the lesson.

On examining the school practice records using document analysis, the feedback was given on the supervision sheets and, for tutors who had some time with students, they could talk to them in form of feedback as a team just like Ali (tutor) preferred to discuss students' concerns as a team and stated that, " ...ah with these big numbers, I find conferencing with the whole group as more convenient." The tutors would meet students as individuals, as well as in groups, to discuss the lessons. The students felt that they benefited as individuals because such feedback touched their personal problems and areas of weakness. Jacob asserted that:

> They can meet us as individuals since each individual has a personal problem. Then they can also meet us as a group. They discuss the lesson and they call us and they tell you the areas of weakness and those that need more improvement. We also learn from others mistakes.

Ali realised that some tutors could not explore students' strengths that were not stipulated on the supervisory tool, which was a disadvantage when giving feedback and scoring a student's performance. Ali expressed concern that, "… some tutors just concentrate on the developed tool when it is possible to include other salient areas."

Tutors observed different students whenever they moved out to supervise. The follow-up of a specific student was not possible because of the schedules and big numbers of students in colleges. However, to help a particular student, some tutors read the previous supervision reports written by other supervisors. Ali stated "…reading comments of the previous supervisor serves as my take off point for follow-up in the supervision." On reading some comments on the supervision sheets, Felistus expressed concern that "… some feedback is subjective as tutors stay in a session for a short period of time, then prepare comments even

when they miss most vital and interesting parts of the lesson." Felistus' concern is substantiated by Esau, a student, who said that:

> Tutors attend our lessons for a short time. They write comments and leave a sheet. Some tutors do not have the patience to sit in the class and observe students for the whole period or teaching session and, because of that, they miss vital sections of the lesson, which limits their discussion, in case of any post observation conference.

The researcher observed that the tutors who spent little time in sessions even rarely had time to meet the students to discuss problems that affected their lesson delivery, since they opted to hurriedly scribble comments and leave supervision reports in students' files.

Hannah was concerned with the authoritarian approach tutors used in School Practice that it lowered the students' spirit and esteem. Hannah asserted that:

> Even some harass students with comments like, 'your classroom control is poor.' The way some tutors handle students during scheming and how they speak to them after supervision, especially about their lesson plans, notes, and presentation, is as disheartening as they tend to be harsh.

The researcher found out that tutors observe different students whenever they go out to supervise. The follow-up of a specific student on specific concerns is not possible because of the schedules and big numbers of students in colleges. The researcher observed that post-observation phase for most of the supervisors who made attempts was more of tutors telling students what to do than exploring and sharing interventions that improve instruction. This behaviour did not exhibit collegiality and neither does it with constructivist principles.

Turning to School Practice preparation activities, like micro teaching, role play and peer teaching, these activities enable the critical voice domain and are very pertinent in orienting students to School Practice. However, these activities were loosely handled or even neglected. Ali asserted "…We had stopped conducting micro teaching."

On the contrary, some colleges attempted to use these activities to orientate their students to some techniques of teaching. For Zuena, role play, debate and micro teaching were being used to prepare students for School Practice. Joseph treasured peer teaching, having reaped confidence, and narrated that, "I like peer teaching because it has helped us to gain confidence along with some skills, like planning and making schemes of work."

The narratives express how important micro teaching is in teacher preparation. Activities, like micro teaching, role playing and peer teaching enable the critical voice domain and very pertinent constructivist practices that orient students to School Practice. This is evident in what Agnes expressed in that "My co-teacher and I take about five minutes in between sessions to think and talk about what we think was successful, the weak areas, and how we can adjust for the next lesson." Students get opportunity to observe and, thereafter, make submission in form of inquiry or guidance to the presentation. However, these activities are loosely handled or even neglected.

On observing and probing how reflection is applied to School Practice, the idea of reflective practice is not familiar to students, not even to the participant, Joseph, who demonstrated a bit of it; reflection was just spontaneous. Joseph asked the pupils in his lesson when explaining to 'stop, think, listen then imagine.'

The analysis of documents and the responses given in the interview revealed that reflection, as an activity was not a common practice in colleges, since neither the tutors nor the students had any form of structure to follow when reflecting on sessions. However, traces of reflective practice could be noted in some expressions, like Dickson who referred to having the ability to self-assess his teaching toward improvement. In his opinion, he identified what had to be done and to be improved and that made him to be a lifelong learner. The experience of reflective practice was limited to the component of self-evaluation on lesson plans while they

were not aware that reflective practice is a structured formal and routine activity in modern teaching. The reflective journals and post observation records were mildly put in practice.

Integration and use of ICT in School Practice supervision is a constructivist practice that enhances students' engagement, research, critical thinking and creativity. However, the colleges with the Internet have a challenge of students of spending more time chatting with friends on Facebook and WhatsApp than using it on productive things. Jacob narrated that, "…we have never used technology here at college." The tutors neither use ICT in their teaching nor use it in supervision. This implies that students, too, have difficulty in integrating ICT in their teaching. The participants need to be exposed to the proper use and benefits of ICT in education.

On School Practice documents, the study scrutinised secondary data which included; written data from lesson plans, reflective journals, tutors' feedback, observation notes from the tutors, and data from peer teaching practices, reflective discussions, and follow-up records. Document analysis enabled the researchers to know what had already been recorded in the area of interest. The analysis of documents focused on three major themes namely, feedback, shared control and reflection.

The supervision sheets were accessed in the School Practice Co-ordinators office. A number of records were missing and not in use. The researcher scrutinised the supervision sheets written by tutors from the school practice coordinators to get acquaintance with the quality, tone and focus of the comments that were given to students in form of feedback. The common assessment and observation tool was the supervision record. Colleges do not have many formats to be used in supervision. On the supervision records scrutinised, very few tutors attempt to be indirect while very many supervision sheets had direct comments. Some of the comments noted were:

1. Shape well your letters on the chalkboard.

2. Use an audible voice.
3. No single learning aid was used.
4. Very poor handwriting.
5. Improper use of the chalkboard.

These were examples of comments used on the supervision reports exhibiting authority and being direct, which are typical characteristics of traditional inspection. Constructivists use indirect comments which are also suggestive to enable the supervisee to set options for improving on an established concern. The colleges need to explore the tools of supervision and require training on indirect description in supervision.

The students expressed concern that many tutors supervise and go, leaving a supervision sheet behind. It is the duty of the student to comprehend what the supervisor suggests for improvement or to devote time to look for the author of the supervision sheet for clarification. The feedback is mainly recorded on the supervision sheets. The tutors assign grades to students on School Practice for use to establish their relative stand when compared to other students. The grade assigned is at the discretion of the tutor, basing on how they interpret and discuss students' performance. There were signs of tutors' bias and subjectivity in this type of scoring of students, especially, when the relationship with the tutor was strained, just as in the case of a single observation when the tutor's competence was lacking.

The researcher made attempts to scrutinise documents that evidence supervisor and supervisee consensus and next plan, which happens to be the shared control aspect of constructivist practices. The researcher anticipated that colleges had records of the post observation conference with details of areas agreed upon for improvement by the supervisor and supervisee. These records were not available.

In one observation session that was intended to establish supervisory behaviour of one supervisor who claimed to practise clinical supervision, the supervision was less collegial. An attempt was made to check supervisors' anecdotes, reflection journals and observation notes

which portrayed control through the contracts or agreements between the supervisor and supervisee. The researcher found out that neither the tutors nor students had pre- observation nor post- observation records an indicator that supervision was too formal, non-collaborative and authoritarian. It was evident that clinical supervision was not being implemented.

The researcher wished to scrutinise any document to serve as evidence for reflection or reflective practice for both tutors and students. Apart from comments on lesson plans under self-evaluation, reflective practice is strange to the tutors and students. Reflective practice plays a vital role in the development of professional skills. Promoting reflection as an activity in colleges is important since reflective thinking helps to prevent pre service teachers from settling on existing traditional educational patterns in schools. However, there were no records such as video recordings, students' portfolios, reflective journals and dairies, and pre and post conference reports to prove that reflection was being practised in the colleges.

4.3.3 Tutors' Supervisory Behavior Disparity from the Constructivist Theory

The researcher used observation and interviews to explore the tutors' supervisory behaviour disparity from the Constructivist Theory and, further, aimed at determining the professional relationship between tutors and their students. The choice to investigate Second Year students who were on School Practice was strategic to establish and understand whether and how teacher preparation was useful in facilitating the development of constructivist practices that could increase both student engagement and knowledge construction. The researcher, along with research assistants, carried out observation on the School Practice activities that included planning, implementation and evaluation. The focus was on the behaviour of supervisors and their relationship with students during School Practice.

On supervision process and model, the researcher assessed how School Practice supervision in colleges was organised by college administrators. The school practice coordinators prepared lists of students for tutors to supervise on a particular day. Supervision commenced

two- three days from the start of the teaching phase assuming that students had already settled in the practicing schools. The School Practice coordinators prepared schedules and supervision templates for supervisors to follow.

The tutors got to the assigned schools to supervise the allocated students. Tutors looked for the assigned students and either informed them in advance or not before the supervision. They got to the classroom and assessed the presentations following the given template. The tutors recorded their observations clarifying on the patterns they wished particular students to retain and those to be improved upon. The researcher observed that, some tutors who moved out to supervise students simply left the supervision form in the students' supervision files.

The researcher observed that, in most cases, tutors ambushed students for supervision and just wrote comments and left without any discussion their presentations. The researcher also observed that some supervisors spent little time in the classes and hurriedly, with excuses of trying to cover all the students that had been assigned to them for that particular day.

In one of the sessions, the tutor who was supervising received a telephone call almost at the beginning of a student's presentation and moved out for almost half of the lesson. The comments that were given to the student at end of the presentation were contradictory to what had prevailed while the supervisor was absent. In some situations, the tutors would find the lessons in progress and many would simply start supervision from that point. Even when the lesson had, like, five minutes to end, a student would be issued a supervision sheet with comments.

The researcher found out that colleges still use the corporate supervision model though some tutors assume to be using the clinical method. The researcher observed that the supervisory behaviour in the colleges was neither collegial nor collaborative, as some of the supervisors were exercising authority and some exhibited unprofessional conduct.

The study examined the supervision tools used in colleges and observed that a particular supervision record was used as a rubric or template to follow when observing a session. The common supervision sheet had three areas, namely matters arising, patterns to retain, and patterns for improvement. The spaces that had been provided mandated the supervisor to write at discretion implying that each tutor was acquainted with what to observe.

The study observed that other relevant supervisory tools were not known were simply left out, such as; timelines, portfolios, wide lens, time lines and seat charts. Even the improved rubrics did not explore aspects that describe best teaching and the basis for distinguishing accomplished teachers. The researcher noted with concern that, without any tool some tutors would not know what to observe in a lesson. Basing on a few supervisory tools for assessment was contrary to the constructivist aspirations of using multiple assessment modes.

The tutors gave feedback which was neatly recorded on the supervision sheet. It was observed that some tutors spared some time to meet either individuals or groups of students to share information regarding the presentations. It was not common to see tutors conferencing with students before supervision. However, discussing after presentation was somehow useful to the students.

The researcher observed that post observation phase for most of the supervisors who made attempts was more of tutors telling students what to do to avoid using constructivist approaches which requires that a teacher challenges a learner to search for answers or solutions himself/herself. The behaviour did not exhibit collegiality. Constructivists advocate for a collegial and collaborative working relationship between the tutor and student.

On assessment of students on School Practice, the researcher observed that the supervisors, after issuing a supervision sheet, secretly scored the students' performance and handed a copy to the School Practice Coordinator for compiling. The average score for a student throughout the school practice determined the grade of the student. Assessment of students in School

Practice programme was basically derived from the scores tutors (supervisors) awarded students whenever they made supervision visits.

The tutors used the grades they assigned students in School Practice to establish their relative stand. A grade was awarded basing on how tutors interpreted and discussed students' performance. Saul affirmed "… I always note down students' mistakes in lesson delivery for discussion."

The narrative implies that scoring students is entirely on tutors' discretion whose expertise and acquaintance of modalities is not guaranteed. Constructivists advocate for several modes of assessment that help to depict a representative and holistic image of a student rather than basing on individual tutors imaginations and whims.

On probing college administrators' participation in School Practice supervision, the research assistants (participants) were asked to say something about the Principals and other college administrators' involvement in supervising students on School Practice. Betty observed a very big weakness that Principals rarely participate in the supervision of students. Betty voiced that;

> It is very rare to see our Principals and deputies in the classrooms supervising students, not even coming around. I am certain that they even don't know some students. The principals come in at the last point to grade students when we are preparing for moderators.

On examining and probing on reflective practice, the only practice in colleges that relates to reflection was self-evaluation and, unfortunately, students did not give it more thought, as many simply wrote 'successfully taught' as a routine remark for self-evaluation on their lesson plans.

Reflection was not a familiar practice in the colleges. It was established that records like the reflective journal and journal wheel had never been used and, therefore, were not known. The

reflective practice requires a formalized self-observation and self-evaluation articulating areas of weakness during a presentation, as well as options or remedies for improvement in the next sessions. Reflective practice is significant and has a high potential of bringing about desirable improvements and changes in the teachers' instructions.

The study probed the management of micro teaching and how it was conducted in colleges. Micro teaching was devised to enable students in colleges to practise and refine identified techniques in a scaled down setting. Unfortunately, colleges assume that this preparation is traditional and, hence, it was not being practiced. On probing, the researcher realised that micro teaching is known but the manner of its organisation and how it works was not known. It was found out that the tutors could not distinguish between terms, like approach, strategy, method and technique.

Peer teaching and team teaching are constructivist practices that enhance confidence, collaboration and teamwork amongst students. The students are paired during School Practice and the intention is to enable them to carry out peer teaching and peer supervision. The observation made on peer teaching in Primary Teachers Colleges was that students rarely practised peer supervision, as they were busy preparing lesson plans, visual materials while the co teacher was teaching. Students were not given tips on what to observe in order to guide one another.

Team teaching, too, was known, but not appropriately used. The tutors and students in colleges assumed that team teaching could be used whenever the supervisors wished to observe more than one teacher in a session by instructing take over by the co teacher. The researcher observed that the tutors in colleges were helping students to explore different teaching methods. However, it was evident that even those methods recorded on lesson plans and schemes of work were not implemented.

4.3.4 Interpretation of Implementation of Constructivist Principles and Practices in Supervision of Students on School Practice

The study revealed that students were allocated practising schools within the proximity of the college by the School Practice Coordinator a practice which is contrary to the constructivists who believe that students need to be allowed to make choice of the schools and classes to teach.

Very few tutors had time for students, especially acquainting them with formats and other expected details on the schemes of work. Tutors assumed that students knew what to do and expected good schemes of work. In some colleges, the assigned tutors could not be available for days and would appear for a short time. Students would run up and down on sight of such tutors like children.

There was a concern of some tutors who barked at students, tore schemes of work or simply crossed not everything and threw drafts in the faces of the student as gesture to express unsatisfactory work. The observation arises from Brenda who said that "the moment the tutor threw away my schemes, I shed tears and almost abandoned the course. It took a couple of days to compose myself." This exhibited the authoritarian behaviour which undermines and erodes the confidence of the students. Such supervisory behaviour undermines the constructivist principles and concepts.

Micro teaching in colleges is no longer given the required attention, with the assumption that this preparation is traditional. The researcher realised that micro teaching was known but the manner of its organisation and how it works was not known. The tutors could not distinguish between terms, like approach, strategy, method, and technique.

The study observed that other relevant supervisory tools are not known or simply left out, such as portfolios, wide lens, timelines and seat charts. Even the improved rubrics did not explore aspects that describe best teaching and the basis for distinguishing accomplished teachers.

A number of records were missing and not in use. Colleges do not have any other formats to be used in supervision. On the supervision records scrutinised (Appendix 5), very few tutors attempted to be indirect while very many supervision sheets had direct comments which characterises the banking approach in Fraire's pedagogy.

These were examples of comments used on the supervision reports exhibiting authority and being direct, which are typical characteristics of traditional inspection characterized by tutors didactively supervising and simply leaving a supervision sheet behind. The researcher also observed that post observation phase for most of the supervisors who made attempts was more of tutors telling students what to do than exploring and sharing interventions that improve instruction. The behaviour does not exhibit constructivist principles and lack collegiality.

The assessment made on students is not comprehensive enough to depict a representative and holistic image of a student. The grading is at tutors' discretion and is based on individual imaginations, mood and whims.

The Principals and their Deputies rarely participated in the supervision of students. The study reveals that they came in at grading of students in preparation for moderation. The profiles prepared for some students at moderation was not representative as they assessed them from a narrow scope.

Reflection is not a familiar practice in the colleges as it is narrowed to self-evaluation. Unfortunately, students do not give more thought to this as they simply write "successfully taught" as a routine remark or comment. Records like the reflective journal and journal wheel have never been used and, therefore, are not known.

The constructivists emphasize the use of learners' prior knowledge to generate new or more knowledge. Tutors were not applying this principle because they thought that their students knew little or nothing about teaching and expected them to be receptive to whatever

suggestions they make. This interpretation arises from many tutors' statements, especially Mercy, who said that "students here come when they are very raw and know little about teaching."

The tutors use ICT in neither their teaching nor in supervision. This implies that students too have difficulty in integrating ICT in their teaching. The participants need to be exposed to the proper use and benefits of ICT in education.

4.4 Constructivist- Guided Coaching within the Non- Classroom Based Activities

The third question for this study was to examine the implementation of constructivist- guided coaching in non-classroom based activities and disparity of management of non-classroom based activities from the Constructivist Theory. Through the use of interviews and observation, the researcher endeavored to establish what tutors believed about constructivist-guided coaching.

4.4.1Tutors' Understanding of Constructivist- Guided Coaching

Constructivist- guided coaching, as a professional practice, is an important aspiration to high levels of service encompassing expertise and situational judgment: commitment to quality and ethical standards, integrity, and, accountability.

Ali believes that a tutor takes a leading role to serving as a model to students. Ali states "…a shepherd leads the flock to wherever they should go; similarly, the teachers lead learners to where they need to go." This perspective considers students as the passive followers of the leadership that teachers provide. In that context, the constructivist guided coaching approach might not be for everyone especially the students, who expect instructions through a teacher-centred and authoritarian approach. However, James believes that indirect approaches enable students to make informed decisions and further argued "In the process of counselling, a teacher is like a coach, because he/she facilitates and guides students, on how to conduct themselves without imposing or suggesting patterns of behaviour."

In light of constructivist guided coaching, John explained "…a student is like a garden because as you feed it, it grows and becomes big, strong, and independent minded." Constructivist guided coaching enables a gradual and permanent students' professional transformation. Implementing constructivist guided coaching enables students to experience and grasp a sense of perspective on a broad body of knowledge (episteme) and also get hold of methods and techniques that they can rely on to work (techne). The integration of this experience and the reflections on their own values and beliefs enables a more personal level of enquiry and a practice congruent to the way they see themselves (phronesis). It is through reflective learning, criticality and a mastery of a sufficient body of knowledge, that students are equipped to develop a practice that is robust, effective and ethical.

4.4.2 Implementation of Constructivist- Guided Coaching in Non-Classroom Based Activities

The study established how constructivist- guided coaching was incorporated in the preparation of students' professional growth with specific focus on the non- classroom based activities. The non- classroom based activities refers to activities that are carried out within the college but not in the classroom. The researcher used observation to explore different coaching settings where students' professional growth could be initiated. The researcher had a typical weekend at each college to observe and interview respodents.

According to Martha, "…the tutors try to discuss and expose to students the kind of life to be experienced when they leave college." She admitted that, occasionally, "…tutors share with students their professional experience and advise them on how to conduct themselves." Martha said that tutors usually tell them about how other people live out there.

These narratives imply that students' mentorship in and outside the normal teaching schedule is of paramount importance to tutors. It is important to state that teaching is a full time duty that stretches beyond the classroom to include routine, non- programmed activities and some aspects of the hidden curriculum.

The non- classroom based contexts explored in this study in which constructivist guided coaching was applicable included; preparation for child study, students' leadership, co-curricular activities, personal tutors/ college families (student –tutor relationship), college rules and regulations, conferences/ CPD workshops and Professional Learning Communities(PLCs).

The researchers established that the colleges treated Child Study as a relief because students were instructed to be attached to schools closer to their homes. Tutors were supposed to spend a considerable time leading students through the guidelines and orientation to school life. The tutors did not have time to do so, instead, they just issued guidelines. Ali stated "Child Study exists and tutors simply give students guidelines and mark reports." Mercy expressed concern on the preparations for Child Study and the reports submitted at the end of the exercise. Mercy observed that Child Study is not properly done and in most cases students just copy.

Hannah and Thomas concurred with Mercy and complained that many students could not work independently as they chose to copy from others who performed well, or duplicated work of the previous years. Hannah mentioned that;

> It is common for students to copy schemes and Child Study. For Child Study, to some extent, you find there are some students who Xerox (copy). They will not understand how to do research on their own, which means they are depending on others. So that is a challenge.

However some students who took time to comprehend the activity and its relevance, besides Child Study they understood what a school was and how teachers were expected to conduct themselves. Martha explained that Child Study gave a good orientation to school experience and the activity changed his/her life. Martha started to feel like a teacher and had to adjust lifestyle.

The interviews revealed that Child Study was carried out by all students and each had a marked copy as per the requirement of Kyambogo University. The marking and scoring varied from tutor to tutor depending on how one comprehended the report. The majority of tutors who were not specialised in either Professional Education Studies or Early Childhood Development found it difficult and a bother to mark the reports. Tutors preferred to assign this task to specialised staff than treating it was everybody's work.

During the interviews, the respondents admitted that they looked at previous Child Study reports that had been scored well and used them to make their reports implying that they just modified a few aspects to give an impression that they were original. The students expressed a concern that even when one copied a report that scored highly in the previous years, to their shock, another tutor would give a very low mark, meaning that the students could see the variations in tutors' judgment and their being subjective.

The tutors tried to coach the students on how to go about the exercise and methods of obtaining information. However, on interviewing the tutors, Child Study was a relief to the college because students carried it out at schools closer to their homes. The colleges have little to spend on and there is some saving during Child Study. No supervision is done at this level and it is necessary to enable students to understand that it matters and also very important in teacher preparation. The researcher observed that the colleges are more interested in the product (reports), rather than the process. This has compelled students to do what they want in this period to the extent that some just pick old copies of Child Study reports and simply update them for submission at the college. The tutors too were focused on the payment they got after marking each report and many did not know what exactly to mark. Child study being an authentic setting or context is a constructivist practice which initiates students to professional work. The students get to the schools and carried out Child Study as they got an orientation to classroom teaching.

Turning to weekly duty and management at colleges, the researcher observed that the colleges organised duty and assigned each student a week to serve as the head teacher. This activity was intended to orientate each student on leadership and how to manage other people. This activity shapes the conduct of the assigned student, as well as enhances professional growth. The tutors on duty are expected to play the role of coaches as the student head teachers work under them. Hamidah in support stated that, "… I learnt how tutors do things and how to be presentable and to behave." Despite the fact that students are allowed to demonstrate leadership skills, this does not have an impact, since the students are not asked to assess and reflect on their own leadership.

The narrative implies that within the college setting and beyond the formal activities there is more informal learning. The tutors appear as models and exemplary to the students. For constructivists' teachers, the hidden curriculum is another opportunity to touch students' hearts and values. The hidden curriculum at college is an appropriate context to foster students' professional growth and development.

The researcher witnessed and observed how students assume roles and leadership of the week under guidance of the tutor on duty. The tutor serves as a coach and oversees the ministers and head teacher of the week. The students organised activities and were in charge of co-curricula, sanitation, welfare and discipline. The leaders of the week addressed students on assembly and would manage even in the absence of the tutor on duty. This arrangement initiated students into leadership and staff management.

The researcher observed that students offered their best in organising different activities at the college. The activities were more or less of a routine which requires more need for coaching to help the students to see beyond the routine activities. The coaching would unfold the big picture of the college as well as opening up initiatives and creativity.

The researcher also observed that the colleges had rules and regulations that were formulated long ago. These rules and regulations are duplicated and issued to each student on commencement of the course. Agnes clarified that "... at the beginning of the course, we received a copy of rules and regulations with the admission letter. Each student was to sign declaring readiness to abide by the rules of the college." The study established that colleges do not involve students in several issues. Lack of students' involvement in this aspect, was a typical trait of traditional instruction unlike constructivist who encourage dialogue, shared control, critical voice and collaboration. The constructivists would expect students to participate in the formulation of college rules and regulations for purposes of not only owning them but also appreciating and comprehending why they must exist and be adhered to.

4.4.2.1 Personal Tutors/ College Families

The researcher used observation and interviews to probe on the groupings at colleges and how these structures enabled the development of professional growth. The college grouped students (personal students) and each cluster was entrusted to a tutor (personal tutor). The college community, therefore has personal tutors and personal students. The personal tutor serves as a mentor, coach, and surrogate parent to each student assigned to him or her and has the responsibility to guide, counsel, discipline and to regularly make a follow- up on established concerns. These families are healthy as they create bonding and strengthen the students' sense of belonging. John stated that:

> Students have been allocated to us our tutors and it is in such meetings that we will tell them what they should do in the field. They (personal tutor families) help students to grow up professionally as these families shape the conduct of an individual. A student will stay at college aware that there is a significant other (someone who is responsible and cares).

John, further, complained that the colleges do a good job, but when students qualify, their behaviour is eroded by the new communities they join. John mentioned that, "… our effort to prepare students is often wasted when they get to the field, which tends to prepare them in another way."

The researcher witnessed the lists and distribution of students and personal tutors. Students were happy with some personal tutors as they expressed the fact that these were parental and exhibited care to all students entrusted to them. Joseph mentioned that:

"Our personal tutor is too parental and has time to talk to us individually on various things that keep us in the right direction. Indeed, some personal tutors don't care and students may complete the course without meeting them. Eh…other students admire the way our personal tutor cares when anything happens to any member in our group."

These narrations express the need for collegiality at colleges. The students who were entrusted to caring personal tutors got sound professional grooming when tutors play roles stipulated by the constructivists. The personal tutor serves as a mentor, coach, surrogate parent to each student entrusted and has the responsibility to guide, counsel, discipline and to regularly make a follow- up on established concerns. The researcher commends this structure within a college setting because of its advantages. Unfortunately, in some colleges, some tutors have no role to play as personal tutors, which makes the concerned students to feel isolated when other tutors have strong bonds with their personal students.

The assemblies at college were organised on a weekly basis where tutors met the students and shared on different subjects. The assemblies helped in harmonizing the routine. Students got general guidance. Thomas mentioned that:

> For professional guidance, we have assemblies and have School Families Initiatives (SFI). We help students to grow professionally through talks, assemblies and clubs. Sometimes, we do meet those students to share with them on how to live after college,

how they should get on, especially, when they are completing their courses in the Second Year. We normally talk to them.

At the assemblies, the researcher observed that tutors and college administrators tend to guide students on matters of conduct and adherence to the Professional Code of Conduct. The assumption is that all students listen and take whatever is communicated. The assemblies help in harmonizing the routine. Students get general guidance. A number of tutors simply leave management of the week to student leaders who also need guidance on a number of aspects such as to deliver well and in line policy and community expectations. The researcher observed that, if more coaching was done, students would be very effective at communication, organization and coordination.

4.4.2.2 Co-curricular Activities (Games and Sports, Music, Clubs)

Another area of interest was the organisation of co-curricular activities and how constructivist- guided coaching was used to nurture students' pedagogical and professional growth. Students were engaged in different co-curricular activities which include games, sports, drama, and clubs. The colleges have patrons for different departments who happen to serve as coaches. The students, in their different groups are coached to align with the expected standards. Students who excel can be an example for others to emulate. Jacob, in support, said that:

> They (tutors) are helping us to develop professionalism. For example, the best teachers could conduct a debate as we observe. In the end, you have to behave in such a way (emulate). There are many things we can learn from friends. For me I used to fear addressing my friends.

Thomas complimented that:

> When they debate, they become fluent. Yeah. So, sometimes, they debate on issues concerning academics which helps them. Students can start hot arguments with

> many sound ideas. This has helped them to think more and more on various subjects.

The narrations reveal that students have joy when working in teams and on activities where there is no tension and academic pressure. The students in different groups are learn from each other. This is among the favorite activities due to the autonomy it vests on the students. These group activities are motivating and the researcher observed that students opt for such activities because of the minimal pressures from the superiors.

Workshops, seminars and conferences were also meaningful to students as they had opportunity to interact with other people. These events promoted coaching in diverse ways with the intent of enabling professional growth. Hannah mentioned that;

> We conduct Continuous Professional Development sessions CPDs where subject tutors lead students through the methodology as well as beefing up their professionalism. We get facilitators from within (amongst themselves) to handle selected topics in our CPDs.

According to the data obtained, the CPDs emerge when students are about to go for school practice and fixed at a time when students are engaged in various preparatory activities which also affect their concentration. The way choices of topics for CPDs are made contravenes the constructivists' position since the students are not involved in suggesting these topics.

The researcher observed that colleges organise demonstration lessons in preparation for School Practice and used different subject tutors to conduct the demonstrations. The concern is that some demonstrations were lacking and not sufficient in coaching the students following the constructivist approach. Expert presentation is relevant in a demonstration for better coaching, modelling and mentoring.

On reflective coaching, the researcher realised that none of the participants was familiar with this practice. Reflective coaching, and sometimes known as self-directed development, refers

to a process by which a teacher systematically plans for his or her own professional growth in teaching. It is imperative that students are helped to develop personal professional growth plans. A professional growth plan refers to individual goal-setting activities, long-term projects teachers develop and carry out relating to the teaching.

Students are expected to plan for their own professional growth in teaching. It is imperative that tutors coach students on how to develop personal professional growth plans. The students are assisted in individual goal-setting activities, long-term projects that a teacher can develop and carry out relating to the teaching.

As an instructional supervisory approach, students select the skills they wish to improve, place their plan in writing, including the source of knowledge, the type of workshop to be attended, the books and articles to read, and practice activities to be set. In this regard, professional growth plans could produce transformative effects in teaching practice, greater staff collaboration, decreased teacher anxiety, and increased focus, commitment to learning and professionalism. However the participants were not familiar with this.

4.4.3 Interpretation of Data on Non-Classroom Based College Activities

Constructivists are particularly keen on informal learning, which emanates from an individual, or small group, who take an active role in the learning process facilitated by a guide or coach. The non- classroom based contexts explored were: Child Study, students' leadership, co-curricular activities, personal tutors/ college families (student –tutor relationship), college rules and regulations, conferences/ CPDs, and workshops.

A number of students do not comprehend Child Study and its relevance. This has compelled many students to do what they want in that period to the extent that some just pick old copies of Child Study reports and simply update them for submission at the college. The colleges are more interested in the product (reports) rather than the process. The tutors, too, are focused on the payment they get after marking each report. A number of tutors do not know what exactly

to mark in Child Study. Coaching would be more meaningful at this stage, aware that child study is an authentic context for students' orientation to school experience. The students need guidance on every aspect of school life.

The non-formal activities at college are more or less of routine, of which the researcher would see more need for coaching to help the students to see beyond the routine activities. The coaching would unfold the big picture of the college as well as open up initiatives and creativity. The tutors are focused on formal activities like teaching and supervising School Practice activities only, ignoring the non-formal activities which are complementary to preparing a holistic teacher.

The students like co-curricular activities due to the autonomy it vests on the students. The tutors simply give clues and leave the rest to students to structure. The groupings enable development of social skills, team work and sense of belonging as groups are coached to align with the expected standards. In this arrangement, the students indirectly develop social values, such as collaboration, sharing, respect, team spirit, resilience, time management and self- dependency. All this would not be realised if tutors did the spoon feeding. The group activities were motivating and the researcher observed team work and group solidarity manifested amongst students whenever it was athletics, games and sports. Unfortunately, the tutors rarely have time to observe what goes on, as most of them leave colleges early to travel back to their homes.

The practice at colleges is to hand to students rules and regulations which were designed. The constructivists would expect students to participate in their formulation for purposes of not only but also appreciating and comprehending as why they must exist and be adhered to. The handling of discipline and managing students by tutors is more of authoritarian and non-collaborative. The college rules demand full students' submission and adherence.

The researcher commends the structure of personal tutors at college because of its advantages. However, in some colleges, some tutors have no role to play as personal tutors with excuses of lack of time, which makes the concerned students to feel isolated when other tutors have strong bonds with their personal students. This structure enhances dialogue and indirect means of handling students' professional and psychosocial issues. This constructivist approach enhances both students collegiality and sense of belonging as the tutors employ counselling skills to guide students.

On students' leadership and managing weekly duty at colleges, some tutors simply leave management of the week to student leaders who also need guidance on a number of aspects, such as to deliver well and in line with policy and community expectations. This activity would be vital in giving students an orientation to leadership, management and taking good decisions when in the process of execution. This would be relevant teaching and learning through the college hidden curriculum.

The colleges tend to organise demonstration lessons in preparation for School Practice and use different subject tutors to conduct the demonstrations. The concern is that some demonstrations were lacking and not sufficient in coaching the students. Expert presentation is relevant in a demonstration for better coaching, modelling, and mentoring.

The tutors tend to ignore the non-classroom based activities and render them irrelevant on the notion that they are there are not examined, and therefore, must be left unattended to. This does not align with the expectations of the profession where a member is supposed to be on duty full time.

The researcher observed that reflective practice was a critical process in refining one's behaviour. The MoES (2007) affirms that it develops a greater level of self- awareness about the nature and impact of their practices, which creates opportunities for professional growth.

It involves thinking systematically about one's own experiences in applying knowledge to practice.

4.5 Essence of Constructivist- Informed Teaching

The perspective of Constructivist informed teaching in colleges is narrowed to organising tasks and assigning individual students or groups to carry out research and to present their findings. Except the use of group work and some demonstration, the tutors are teaching in a traditional way and seem not to be willing to teach in a new way. It is, therefore, their background and orientation that makes it difficult for them to apply constructivist principles.

There is a common misconception regarding the Constructivists Learning Theory that teachers should never tell students anything directly but, instead, should always allow them to construct knowledge for themselves. This perspective confuses a theory of pedagogy (teaching) with a theory of knowing. Constructivists assume that all knowledge is constructed from previous knowledge, irrespective of how one is taught. Even listening to a lecture involves active attempts to construct new knowledge. The illustration of "Fish is Fish" by Lionni, (1970) as relayed in(Appendix 12), shows why simply providing lectures frequently does not work. Nevertheless, there are moments when students have first grappled with issues on their own, that teaching by telling can work extremely well. However, tutors still need to pay attention to students' interpretations and to provide guidance, when necessary. According to Egan, Stout &Takaya (2018), the story of "Fish is Fish" is relevant, not only for young children, but also, for learners of all ages.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The following sections discuss the findings on the three main research questions (constructivist principles, supervisory process and coaching) linking the development of knowledge with the theoretical framework of Constructivism, implications for the study, and recommendations.

5.1 Discussion of the Findings.

The discussion of findings for this study is arranged as per the main research questions, as follows:

i. What constructivist principles inform the teaching of students in Primary Teachers' College classrooms in South Eastern Uganda?

ii. What ways do constructivist practices inform School Practice supervisory processes in Primary Teachers Colleges in South Eastern Uganda?

iii. Is constructivists- guided coaching incorporated within the non- classroom based activities to enable students' professional growth at Primary Teachers' Colleges in South Eastern Uganda?

5.1.1 Constructivist Principles used in the Instruction of Students in Primary Teachers' Colleges.

Constructivist approaches to teacher preparation may promote epistemological change among teachers. The education systems should include frequent opportunities of constructivist teaching experiences for pre-service teachers in order for them to gain content and pedagogical skills (Kablan & Kaya, 2014; Kaushik, 2018).

There are challenges in translating Constructivism as a theory of learning into viable instructional strategies that can illuminate this epistemology for student teachers. Many tutors have experienced a traditional instruction orientation and background which strains their

adaptation to emerging shifts in teaching, just as observed by Otaala ,et al.; (2013), Maani (2013) and Olema et al. (2021). This has been manifested by the difficulty in assuming new roles (facilitator), ICT integration in Instruction and taking on reflective practice. Tutors need a transformation in order to have an influence on students art of teaching, as mentioned by (Boyd 2015; Habler, 2016; Quinta et al., 2015; Winterhalder, 2017), that the way tutors teach has more influence on how student teachers teach. Therefore, tutors should treat students as they expect them to treat pupils. Without high-quality teacher preparation, teachers largely teach the way they were taught. It is difficult for student teachers to adapt and adopt learner-centred pedagogy.

The current teacher training programme on the whole, is found to be insufficient because it does not provide the student teachers with opportunities to reflect on their own experiences nor to modify their teaching practice, which was also observed by Otaala, et al.; (2013), Maani (2013), Olema, et al.; (2021) and Kim (2005). Indeed, this is true when tutors hardly acknowledge students' existing knowledge, beliefs, and experience, thus continuing to be traditional. Olusegun (2015) suggests that tutors need to reflect on their practice in order to apply these ideas to their work and that constructivist tutors should encourage students to constantly assess how the activity is helping them to gain understanding. Constructivists agree on the fundamental principle that people create knowledge from the interaction between their existing knowledge or beliefs and the new ideas, information, or situations they encounter.

The respondents expressed views that, although the PTC entry qualification was raised, several students depict uncertainties with shallow knowledge that does not represent their O-level results; this is in agreement with what had been discussed by Khisa and Lanyero (2009). This was justification for not considering students' prior knowledge. This is a traditional approach of assuming that students do not know. It would be a tutors' responsibility to set

establish an appropriate and authentic setting to motivate students, as suggested by Brown (2012) and Baviskar, et al.; (2009) that a constructivist teacher creates a context where the learner is motivated to learn, provide meaningful content and resources, and pose relevant problems and questions at appropriate times, while connecting these resources and questions to the students' existing knowledge. Wang (2016), in support, suggested use of students experience to lead them to new experiences as the best method.

Bakaira (2018) too, asserts that "to develop a competent- based teacher emphasizes the importance of teacher trainees deconstructing their own prior knowledge". However, the tutors in the PTCs believe in the prior knowledge to the effect that, despite the emphasized entry requirements, students tend to have a shallow content base that trust in their having sufficient prior knowledge becomes rather difficult. Besides the many excuses that relate to time, large numbers and lack of resources, tutors opt for the transmission model, which is also reported by NPA (2018) and Olema; et al. (2021).

The constructivists expect a setting characterised by students' autonomy, authenticity, engagement, cooperative activities, motivation and prior knowledge utility to cause relevance which is in agreement with Pereira & Sithole, (2019). There is need for tutors to employ realistic approaches to solving real-world problems. The tutors need to create learning situations, environments, skills, content and tasks that are relevant, realistic, and authentic to represent the natural complexities of the 'real world'. In this way, the tutors can set up problems and monitor students' exploration, guide the student enquiry to promote new patterns of thinking by inquiring about students' understanding of concepts before sharing their own understanding of those concepts.

In a constructivist classroom, students should be helped to rethink the source and role of authority within a class structure. The objective should be to make the prospective teachers realise that tutors and students are partners in the process and teaching cannot be viewed as

the transmission of knowledge from the enlightened to the unenlightened. Efforts should be made in these college programmes to help student teachers to deconstruct their own prior knowledge and attitudes, comprehend how these understandings evolved, explore the effects they have on actions and behaviour, and consider alternate conceptions and premises that may be more serviceable in teaching.

In this study, the researcher observed that tutors continued to be authorities as their role was simply to approve or disapprove whatever was presented in the plenaries. The tutors' traditional orientation keeps manifesting as they assume superiority of having a final take on each deliberation in plenaries. Even the tasks assigned by tutors that keep students in the library become a barrier to their critical and creative thinking, vesting them with a belief that all knowledge is objective and found in books. The constructivists express the need for mutual interactions between tutors and students, while putting in mind students' existing knowledge, new knowledge and experiences (Kim, 2005). Cognitive dissonance appears to be created when students expose their own misconceptions rather than having teachers expose those misconceptions for them. In order to create cognitive dissonance, tutors are expected to magnify the differences between students' prior and new knowledge by exposing misconceptions (Hartle, et al., 2012). However, this was not common at colleges due to the traditional orientation where tutors assume a superior and repository state.

The researcher observed that most students believe in using past papers to guide their reading and research, with an assumption that question items might emerge one time. Besides application of knowledge and its transfer to manage emerging problems, the tutors' and students' focus is on how to pass examinations. This has turned the preparation of teachers to be more theoretical than being practical, a situation that depicts perpetuation of idealism in colleges. With constructivist informed teaching, lessons should be developed and executed to create the greatest opportunity for learning, irrespective of the strategies used (Baviskar et al.,

2009; Santoyo, 2016). Constructivist lessons combine external processes, such as peer tutoring, scaffolding, and collaboration with internal processes (Bruning et al, 2011), such as memory strategies, reflection, and self-motivation. Classroom teaching practice is likely to be more effective when it is informed by an understanding of how students learn. Modern science has supported Knowledge Construction Theory in demonstrating that humans naturally learn through active methods, rather than in passive ways (Kim, 2005).

In some instances, the feedback was prompt and guiding while sometimes, it was direct. The researcher observed that, while tutors demanded that students should properly use the questioning technique, several of them were challenged with the questioning process.

Reflection as a constructivist activity was not a common practice in colleges. Neither the tutors nor the students had any form of structure to follow when reflecting on sessions, much as tutors in this study did not think that reflection was an important practice of an effective teacher and were not familiar with the practice. Otaala et al. (2013) affirm that reflective practice enhances an individual's ability to ask the right questions, set tasks that challenge learners to integrate new learning into the previous learning and apply new learning to everyday situations.

The study revealed that tutors rarely get feedback on their teaching performance and of all constructivists' practices, reflection did not feature and, yet, in modern teaching, it vividly improves both individual and group performance. This feeling is in consonance with the MOES (2007) suggestions to address the likely weaknesses of reflective practice, such as having coaches who create an environment of trust and build a context for reflection, unique to every learning environment. The coaches, after reflection, can provide both feedback and support in a non-judgmental manner to improve on tutors' performance.

The constructivists expect a setting characterised by student autonomy, authenticity, engagement, cooperative activities, motivation and prior knowledge utility to cause

relevance. There is need for tutors to employ realistic approaches to solving real-world problems; The tutors need to create learning situations, environments, skills, content and tasks that are relevant, realistic, and authentic to represent the natural complexities of the real world. This is supported by studies conducted by Amparo (2015) and Ally (2008) that encourage constructivists teaching strategies which engage learners in personally relevant and meaningful activities that require authentic application, cooperation, collaboration, and reflection to construct knowledge.

The majority of the participants believe in objective truth rather than multiple truth and subjective realities. The main assumption is that the libraries and books contain the knowledge. The students perceive the tutors as superior experts full of knowledge and wisdom. This contravenes what the constructivists assume, that is, realities are multiple, constructed, and holistic; and that the relationship of the knower and the known are interactive and inseparable (Kennedy, 2016).

The students expressed the fact that they are free with the tutors and can inquire on anything during formal time, which is a constructivist practice. However the researcher observed that there is a controlled student teacher relationship as students were not free, as they expressed.

Planning for instruction with students is a new concept that tutors take as not being necessary. This depicts the repository dominative tendencies and the mindset of being fountains of wisdom. As much as participants expressed autonomy during instruction, the concept of involving students in planning seemed queer and not applicable, as tutor assumed perennialists' belief that they had the direction and flow of their presentations.

There were opportunities for students' collaboration, dialogue, negotiation and discussion in the classroom. The students were free with one another and expressed high interests in activities that caused them to work in pairs or groups' especially, when there were minimal

tutor interventions. Dialogues and discussions were common in colleges as many tutors opted for group work, which was a constructivist practice.

The tutors claimed to be using learner-centred methods of teaching, such as demonstration, group work, conducting practicals, and use of instructional materials. The tutors theoretically justified the use of such methods and instructional materials because they largely lectured and dictated notes to students and indeed rarely used instructional materials. It was also a challenging task for tutors to conduct inquiry teaching effectively and efficiently in classroom. In a similar way, Zeichner (2010) makes a strong case that teacher education continues to be characterised by a traditional approach whereby academic knowledge is viewed as the authoritative source of knowledge about teaching. This is supported by Lunenberg, et al. (2014) who affirm that there is evidence that teacher educators do not always teach in the way they preach as practiced in the Primary Teachers Colleges.

Constructivism does not look forward to uniformity in evaluation as it takes into account multiple perspectives presented by students, as suggested by Mensah (2015 and Amparo (2013). The constructivist approach to evaluation is subjective and emphasizes the evaluation of the process, progress and the product of learning while the students are at work, during the whole session. The trend of competition and search for grades has channeled tutors efforts on enabling students to pass examinations, which are a barrier to implementing constructivist assessment. Hollin (2011) observes that constructivists advocate for multiple and authentic measures of assessment because these provide a richer insight into the learner's construction of knowledge.

There is a challenge facing tutors of lacking the opportunity to learn from colleagues, particularly, in a setting where there is a structure and protocol for revealing excellent teaching practices and having a group of professionals to discuss as they learn from them. The levels of ICT integration are very low as the tutors and students just do surfing on the

internet and use of phones. It was unfortunate that students spend more time on E-mails, WhatsApp and Facebook rather than for educational purposes.

The tutors, too, lack digital literacy and fluency which fails them to adapt them well to the current pace and the 21st Century world stance. In order to prepare teachers who conform to the demands of the 21st Century, Lawless and Pellegrino (2007) suggest that tutors should integrate ICT in assessment practices and in the preparation of teachers for primary schools. Introducing teachers to new technologies for teaching and learning can support a change in teaching practices. Tutors, as well as their students, should be trained on hard and software that is common in the 21st Century classroom. This is supported by Ibiloye (2021) who asserts that tutors should have the ability to use digital tools for social engagements and to monitor student activity and performance in order to guide student growth, communication with individual, virtual meeting space design (just like physical sitting control) and ensure inclusive or active participation. It is also in line with Gachago, et al.(2013) who advise that training in technology should encompass telecommunications, satellite access, networking, the internet, videoconferencing and digital components as well as optical technology. This aligns with Ayaz and Sekerci (2015) whose study puts emphasis on the need for technology in the constructivist learning environment. Winterhalder (2013), Almekhlafi and Almeqdadi (2010) also stress that teachers need to create environments where students use technology in their educational tasks to solve problems, communicate, research, and make meaning of the digital world that currently exists. These technologies will permit the 21st century teacher in the 21st Century classroom feel comfortable and to teach effectively and efficiently.

The tutors are aware of the different roles a teacher assumes and many would opt to be facilitators, mentors, counsellors, parent substitutes and coaches. The reality on the ground is that some tutors try to be facilitators but, given the conditions of limited time, the overcrowded curriculum, examination pressure, the large numbers and lack of resources, they

are compelled to be instructors using the traditional knowledge transmission methods. Lunenberg et al. (2014) observes that tutors have multiple roles based on their tasks of educating teachers, which contributes to on shaping students conduct, mind-set and professionalism in pursuit of preparing meta and accomplished teachers (Lunenberg, et al., 2014).

For transformation and fitting in the shifting paradigm, Filipatali (2013), O'Sullivan (2010) and Meena (2009) stress the need for tutors to engage in research to comprehend what prevails elsewhere.College tutors are also supposed to engage in research activities as one of the roles. However, their engagement in research activities is almost non-existent.

5.1.2 Constructivist Practices in School Practice Supervisory Process in Primary Teachers' Colleges

Teacher education programme should aim to develop the knowledge, skills and attributes of pre-service teachers in order to prepare them to teach effectively in Twenty First Century classrooms. Fekede and Tuli (2016) express how important School Practice is in teacher preparation. It is a highly valued component of teacher preparation because it lays a firm foundation for future professional development as it provides a site where students teachers can practise the art of teaching in real school context (authentic experience). A practicum or School Practice, which provides students with supervised experiences, enables the student teachers to understand the full scope of a teacher's role. School practice experiences are very powerful in shaping pre-service teachers as they are real (authentic experience) in contrast to the artificial environment of the tertiary education courses as observed by (Rugyendo, 2011).

The study observed that students were allocated practising schools within the proximity of the college by the School Practice Coordinator, a practice which was contrary to the constructivists who believe that students need to be allowed to make choice of the schools and classes to teach. Wang (2016) expresses the fact that a constructivist teacher offers his or

her students with options and choices in their work. Indeed, School Practice coordinators should reject the common practice of telling students what to do. The option would be to engage their trust and invite students to participate in a constructivist process that allows them to be involved in decisions about their learning.

It was noted that very few tutors had time for students, especially, acquainting them with formats and other expected details on the schemes of work. Tutors assumed that students know that to do and expected good schemes of work. In some colleges, the assigned tutors could not be available for days and would appear for a short time. Students would run up and down looking for tutors to help them to make good schemes of work.

Tutors' hostile/ unfriendly approaches are indicative of lack of grounding in Philosophy of Education. If tutors do not walk the talk, their students will do the same when they have qualified as teachers. There was a concern of some tutors who barked at students, tore schemes of work or simply crossed out everything and throw drafts in the faces of the student as a gesture to express unsatisfactory work. This observation arises from Brenda who said that "I remember when a scheme of work was just thrown and the tutor branded it all rubbish. Hm.. I felt small and took a couple of days to make corrections." This exhibited the authoritarian behaviour which does not only undermine but also erodes the confidence of the students. This undermines constructivist principles and axiological concepts that require a student to be motivated to enjoy and value his/her effort.

The study established the fact that micro teaching in colleges is no longer given the required attention with the assumption that this preparation is traditional. The researcher realised that micro teaching is known but the manner of its organisation and how it works is not known. The tutors cannot distinguish between terms like approach, strategy, method, and technique. A number of vital practices are being neglected with excuses of lack of time. Bakaira (2018)

and Chiwimbiso et al., (2017) also observe that teacher preparation is largely divorced from the real challenges of classroom teaching, an argument that has had a long history globally. The student teachers spend most of their training in colleges learning theory, rather than learning and practising how to teach.

Effective supervision requires that the supervisor has the necessary skills and knowledge to support the student during the very difficult job of becoming a reflective practitioner. However, interestingly little has been done in terms of the preparation of supervisors. Thus, supervisors are mostly left alone with little or no training and are left to their own devices in their efforts to establish their pedagogical perspectives, just like it was observed by Gursoy, et al.; (2016) to the fact that several tutors are not acquainted with the supervisory process and behaviour.

The clinical supervision model is systematic and more detailed in approach and seeks to create collaboration between the tutor and the student. However, the colleges still use the corporate supervision model but assume to be using the clinical method. The supervisory behaviour in the colleges is neither collegial nor collaborative as the supervisors tend to exercise authority and some exhibit unprofessional conduct. In opposition, Kwaku and Cudjoe (2016) emphasize use of clinical supervision because it meets the requirements of a good supervision due to its thorough and help-oriented nature. This is supported by Sergiovanni and Starratt (2007) who observe, that in the process of clinical supervision, a one-to-one correspondence exists between improving classroom instruction and increasing professional growth, and for this reason, professional development and clinical supervision are inseparable concepts and activities.

There are many examples based on the findings to show that tutors violate principles of clinical supervision. The researcher observed, that in most cases, tutors ambush students for supervision and just write comments and leave without any discussions on the presentations.

The researcher also observed that some supervisors spend little time in the classes and carry out the supervision hurriedly with an excuse of trying to cover all the students assigned for that particular day. This behaviour means that the pre and post lesson conference are not done. It is the same observation made by Otaala, et al.*;* (2013) on lecturers who supervise secondary teachers when on School Practice. Gursoy, et al. (2016) is concerned with that supervisory conduct, because supervisors cannot adequately help student teachers with continuous development of appropriate teaching styles when they observe lessons for a short time.

The study also established that other relevant supervisory tools are not known or are simply left out, such as portfolios, wide lens, timelines and seat charts. Even the improved rubrics did not explore aspects that describe best teaching and are the basis for distinguishing accomplished teachers. Several studies reveal that portfolio supervision significantly explains teacher effectiveness in the classroom (. Peretomode, 2004; Sule et al., 2015; Usman, 2015). In constructivist evaluation, portfolios of students are important because they provide a meaningful view of the students' process of learning. The portfolios introduces authentic assessment in a rather progressivist way.

Through interviews and document analysis, the researcher established that availability of different School Practice records, a number of records were missing and were not in use. Colleges do not have any other formats to be used in supervision. On the supervision records scrutinised, very few tutors attempt to be indirect while very many supervision sheets had direct comments. Usman (2015) concurs that the manner in which supervisors give feedback to students, significantly impacts on their pedagogical practices and performance in classroom settings. Providing written feedback to pre-service teachers on teaching practice might not bring forth changes in their understanding, decision making or action, as intended. However, suggestion is made that, to make the process of feedback effective, a shared

purpose and desired outcomes between the student and the tutor, as well as reflective interactions among members, are crucial for improvement of performance. The comments used on the supervision reports exhibit authority and are overly direct, which is typical of traditional inspection characterised by tutors supervising and simply leaving supervision sheets behind.

The researcher observed that the post observation phase for most of the supervisors who made attempts was more of tutors telling students what to do than exploring and sharing interventions that improve instruction. This behaviour contradicts the constructivist principles.

The assessment made on students is not comprehensive enough to depict a representative and holistic image of a student. The grading is at tutors' discretion and is based on individual imaginations, mood and whims. Talanquer, et al. (2007) concur and state that tutors can assess student teacher competences in performing a set of teaching skills by reading their lesson plans or observing their teaching, but not their thought patterns . Thus, such assessment alone is not a sufficient indicator of teacher preparation.

The study established that reflection was not a familiar practice in the colleges and the minimal trace narrowed it to self-evaluation. Even with self- evaluation, students do not give it more thought as they simply write "successfully taught" as a routine remark or comment. Records like the reflective journal and journal wheel have never been used and, therefore are not known. Richards and Farrell (2005) express how vital a reflective journal, among others, and how it can be an effective constructivist tool of assessing what teachers have internalised and learnt. Journal writing is one of the invaluable reflective ways for a teacher to develop professionally. The reflective practice cycle developed by Gibbs (1988) can effect actions of a situation.

The feedback, through the reactions of others involved, can affect how a student understands and thinks about the situation. It is also important for teacher educators to promote student teachers' practical wisdom by enhancing their awareness for certain aspects of their experiences, and to promote student teachers' ability to use this practical wisdom during new teaching experiences. Falkenberg, et al.; (2014) suggest for the integration of theory and practice as a way of helping teacher candidates develop practical wisdom (phronesis).

The constructivists emphasize the use of learners' prior knowledge .Unfortunately, tutors feel that their students' know little or nothing about teaching and expect them to be receptive to whatever suggestion they make. This contrasts the constructivist belief on the power of prior experience in knowledge construction, as had been stated by Mugambi (2018), that is constructivists believe that learners construct their own meaning through active engagement and by constructing their own representation of what they know. Students learn from thinking and doing, and thinking results from an activity.

There are challenges with the integration of ICT in School Practice supervision. The tutors neither use ICT in their teaching nor in supervision, just like it is observed in a study by Dayna (2021) . This implies that students, too, have difficulty in integrating ICT in their teaching. The participants need to be exposed to the proper use and benefits of ICT in education. The benefits of integrating ICT and such skills, like use of video analysis in reflective practice, are enormous, especially, the recording devices give students the chance to observe and re-observe their own performance (Boyd, 2015; Goulding et al., 2015; Lengel, 2015; Mayer, 2021; Smith, 2015).

All managers of educational institutions were advised to acquire a copy of the ICT policy and internalize its provisions (MOES, 2010). Obtaining a copy of ICT Policy and to its acquaintance is not a justification for implementation. The levels of ICT integration in colleges is still low evidenced with almost no interaction during COVID 19 lockdown in

Primary Teachers' Colleges unlike other sections of the system that managed online teaching. Nzilano (2015) clarifies on the role of technology as being to enhance constructivist teaching and also that an environment enriched with technology motivates interaction between learners and teachers for the meaning-making process.

5.1.3 Constructivist Guided Coaching and Students' Professional Growth

The information gathered in this study is of central value for teacher preparation, as it can be used to assess the professional growth of prospective teachers, as well as developing insights into learning opportunities that support and foster teacher growth. The constructivist regards reality, as personally constructed 'reality,' is determined by the experiences of the knower. That is, external phenomena are meaningless unless they are perceived by the mind. As a constructivist belief, teachers need to own and control their professional growth. Coaching gives the students more say on the direction of their professional development and encourages them to take more ownership of their professional growth.

Secondly, the Whitmore (2009) found out that coaching has the potential to improve professional practice. The conversations held in a coaching session focus on the enhancement of learning and development through increasing self-awareness and a sense of personal responsibility through questioning, active listening, and encountering appropriate challenges in a supporting and encouraging climate. Coaching is a distinct form of professional development that requires careful planning, execution and evaluation, aware that it makes a significant and lasting impact on one's performance.

Coaching is designed to promote continual development throughout a person's career or provide support to under-performing students as a key component of a performance improvement strategy to sharpen their skills and to enable personal development (https://tta.edu.au/products/1617/7300). A student teacher will more likely

utilise evaluator feedback to inform professional judgment and solicit opportunities for professional growth if they perceive the feedback as useful (Ficke, 2020).

Further still, very many students do not comprehend Child Study and its relevance. This has compelled many students to do what they want in that period to the extreme that some just pick old copies of Child Study reports and simply update them for submission at the college. The tutors, too are, focused on the payment they get after marking each report. A number of tutors do not know what exactly to mark in Child Study.

The study also observed that the non-formal activities at college are more of routine of which the researcher would see more need for coaching to help the students to see beyond the routine activities. The coaching would unfold the big picture of the college, as well as open up initiatives and creativity. By using different events in an institution, students can be trained in various life skills such as self-awareness, creative thinking, effective communication, coping with emotion, and coping with stress, in a joyful and interesting manner. Amparo (2013) stresses that constructivists are particularly keen on informal learning and, especially, the hidden curriculum. Informal learning emanates from an individual or small group who take an active role in the learning process, which is facilitated by a coach guided by the design of the experience.

The study, further, observed that students like co-curricular activities due to the joy and freedom they experience during these sessions. The co- curricula programmes enable development of social skills, team work and sense of belonging, as groups are coached to align with the expected standards. One of the basic principles of the constructivist approach is that rich, healthy and favourable environment which is essential for learning because learners learn more when they are enjoying themselves. However, tutors response to co-curricula is minimal, just as observed by Otaala, et al.; (2013) that many teachers do not regard co-

curricular activities as important in teacher education curriculum. The group activities were motivating and the researcher observed that students opt for such activities because of the minimal pressures form the superiors. This is true because coaching can be used for personal development and a key component of a performance improvement strategy and more effective in educational institutions (http://www.curee.co.uk/mentoring-and-coaching). Whitmore (2009) affirms that coaching delivers results in large measure because of the supportive relationship between the coach and the coachee, and the means and style of communication used. The coachee does acquire the facts, not from the coach but from within himself or herself, stimulated by the coach.

Turning to the manner in which college rules and regulations are managed, the practice at colleges is to hand to students rules and regulations which were designed. The constructivists would expect students to participate in their formulation, for not only purposes of owning them but also to appreciate and comprehend they must exist and be adhered to.

In some colleges, some tutors have no role to play as personal tutors with excuses of lack of time, which makes the concerned students to feel isolated when other tutors have strong bonds with their personal students. When students bond with their personal tutors, they become secure and learn with minimal pressures as an outcome of coaching and psycho social support. Whitmore (2009) expresses the need for high-quality personal and interpersonal skills, mutual trust, confidence and respect within successful coaching relationships.

In elevating the students' sense of responsibility and giving them an orientation to leadership, the study observed that a number of tutors simply leave management of the week to student leaders who also need guidance on a number of aspects so as to deliver well and in line with policy and community expectations. A student teacher on duty would have an opportunity to

practice management under the guidance of a tutor on duty who acts as a coach, which experience can be useful in the future when the student qualifies. Thomas (2012) clarifies that a situation of a one-on-one relationship where a coach supports, collaborates with, and facilitates an individual's learning by helping the individual to identify and achieve future goals through assessment, discovery, reflection, goal setting and strategic action, individual growth (both personal and professional) and organisational effectiveness is made possible.

Another area of concern was the CPDs and demonstration lessons at College. The colleges tend to organize demonstration lessons in preparation for School Practice and use different subject tutors to conduct the demonstrations. The concern is that some demonstrations were lacking and were not sufficient in coaching the students. Expert presentation is relevant in a demonstration for better coaching, modelling and mentoring. This is in line with De monte (2013) who believes that, if teachers collaborate around what they learn from coaching, if they get to observe instruction and, then, talk about the observation with a coach, then it is more likely to be effective. Ali et al. (2018) stress that teachers of today need not to only assimilate academic knowledge but also incorporate knowledge derived from experiential and practical experiences in the classroom and to demonstrate its use in other life contexts.

Overall, professional growth plans could produce transformative effects in teaching practice, greater staff collaboration, decreased teacher anxiety, and increased focus and commitment to learning. Instructional supervision is mainly concerned with improving schools by helping teachers to reflect their practices, to learn more about what they do and why, and to develop professionally (Sergiovanni & Starratt, 2007).

5.1.4 Major Findings

The teaching in Primary Teachers' Colleges to a large extent continues to be teacher centred and the system (teacher education), too, assumes that tutors are informed of what to do as per

their training. The supervision of tutors while at task is rare, implying that they do not get any feedback on their teaching and supervisory performance. Tutors assume a dominative role with minimal exchange of ideas, use of technology and engagement, which hinders students' confidence and knowledge construction.

Clinical supervision is not effectively carried out due to big numbers of students at colleges, tutors' lack of knowledge, its protocol and the time it demands, implying that supervision at colleges, to a large extent, continues to be traditional. Students, without question, or their own input, are expected to adhere to tutors' instructions and to adjust their teaching performance, according to the observations and whims of the supervisor. Supervisors' approach violates constructivist principles of dealing with students. Several supervision tools that promote constructivist principles and practices are not used, which does not give a realistic assessment of students' performance.

The non- classroom based activities are given minimal attention and almost left to students discretion, which does not nurture them well enough to realise the desired professional growth. The non-classroom based activities at college are more of routine with minimal importance attached to them because they are not examined.

Reflection is the least known constructivist practice in colleges. The tutors and students rarely use reflection in the teacher preparation process. Reflective practice is a unifying strategy for redress of these major findings to enable tutors to get feedback and improve on their art of teaching, develop collaborative and operational clinical supervision, use informal approaches and coaching, especially, in the non- classroom based activities to ensure students' professional growth.

5.2. Theoretical Implications

Becoming a constructivist teacher requires a paradigm shift by use of practical strategies which require the will to abandon the familiar teacher centred perspectives and practices by adoption of new ones which are based on constructivist principles. Brunner (1961, 1960) argues that the learner is not ‘tabula rasa’, and so, the learner’s knowledge and understanding needs to be taken into account. The focus of this learning theory is on how knowledge is constructed rather than how it is acquired, which implies that teacher growth can never be based on transmission or delivery of facts and information, but on active learner participation.

Constructivist theories play a critical role in the processes of teaching, and, learning and through constructivist informed teaching, knowledge construction by learners will be supported. Constructivist theories arise and strengthen modern epistemological approaches which regard real or worthwhile knowledge as that one largely coming from the student himself or herself. The strengths of constructivist informed teaching lie in its emphasis on learning as a process of personal understanding and the development of meaning in ways which are active and interpretative. Therefore, tutors need to employ realistic approaches to solving real-world problems and to create learning situations, environments, skills, content and tasks that are relevant, realistic, authentic and able to represent the natural complexities of the 'real world.

Constructivist informed teaching can enable change from the transmission model type of curriculum to an interactive and transactional one where students are actively involved in their learning to reach new understandings. In so doing, the learners harvest knowledge through self-controlled learning platforms, such as compared to objectivism that transmits knowledge from teacher to student.

Education will become more relevant when it concentrates on thinking and understanding, rather than on rote memorisation. In the constructivist classrooms, students will learn how to articulate their ideas clearly, as well as to collaborate on tasks effectively by sharing. The exchange of ideas will enhance their ability to negotiate with others and to evaluate their contributions in a socially acceptable manner. The students' engagement is of utmost importance as it enriches students' learning experiences, broadens academic thinking and improves student development (Fitzgerald et al., 2012).

On analysing constructivist practices on School Practice, students are made to understand the full scope of a teacher's role. Constructivist practices will cause change from the traditional corporate, skill and technical model of practicum experience to one with a broader educative focus: a School Practice experience that can provide students with opportunities for inquiry, where students can try and test new ideas within collaborative relationship, and where they can talk about teaching and learning in a new way.

5.2.1 Limitations

There were a few limitations set for this study.

There is little evidence to the understanding of how tutors conceptualise constructivist informed teaching, constructivism and translating implementing these ideas and experience into teaching.

There is insufficient emphasis on constructivist informed teaching principles in teacher preparation programmes, lack of consistent support to help teachers to integrate these principles into their teaching practice, as well as in the management of non-classroom based activities.

There is confusion of participants' conception of constructivists informed teaching. The participants also realised that the conception of student self-knowledge construction as a very complicated idea on its own.

5.2.2 Recommendations for Future Research

There is rapid development of information and communication technologies (ICT) and, referring to the experience of the instructional challenges in colleges during the COVID-19 lockdown, the researcher recommends for an in depth study of the use and integration of ICT in education as a constructivist practice, particularly, in the colleges and higher education. The researcher also realises the need for an independent study on tutor preparation particularly in the areas of methodology and carrying out of clinical supervision.

5.3 Summary and Conclusion

The study exposes gaps in the instructional processes as students learn, it also points out weaknesses in the School Practice supervision and minimal attention to the non- classroom based activities where constructivist principles can be an option to improve both practice of the tutors and performance of the students.

The teaching in Teacher Training Institutions, to a large extent, continues to be teacher centred. Tutors assume a dominative role with minimal exchange of ideas, use of technology and engagement, which hinders students' confidence and knowledge construction. Tutors need a transformation in order to have an influence on how students teach. Tutors need to acknowledge students existing knowledge, beliefs and experience by giving student teachers opportunities to reflect on their own experiences and to modify their teaching practice. A constructivist tutor creates a context where the students are motivated to learn while having trust in their having sufficient prior knowledge. The study observed that the transmission model in Teacher Training Institutions is due to the many tutors' excuses that relate to time,

large numbers of students and lack of resources. The tutors are not supervised while at task, implying that most of them do not get feedback on their teaching performance.

School Practice supervision at colleges, to a large extent continues to be traditional while the student teachers spend most of their training in colleges learning theory, rather than learning and practising how to teach. Clinical supervision, too, is not effectively carried out due to big numbers of students at colleges, and the tutors do not have sufficient knowledge and the time to follow its protocol. Students tend to adjust their teaching performance according to the observations and suggestions of the supervisor. Supervisors' approaches violate constructivist principles of dealing with students. Several supervision tools that promote constructivist principles and practices are not used, which does not give a realistic assessment of students' performance. It was also observed that tutors do not get any feedback on their supervisory performance, which demands for a strategy to get this rectified.

The non-classroom based activities at teacher training Institutions are more of routine with minimal importance attached to them, because they are not examined. Tutors put focus on what will be examined and leave most of the non- classroom based activities to students' discretion which does not nurture them well to realise the desired professional growth. Any intention to groom students is characterised by tutors taking an authoritarian stance and indoctrinating students. However, as a constructivist principle, students need to own and control their professional growth. Constructivists guided coaching gives the students more say on the direction of their professional growth and encourages them to own their decisions

In formulating a strategy to rectify the concerns of this study, it is explicit that constructivists expect students to construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences (Olusegun, 2015). The analysis of this study portrays an effort on tutors helping students to experience things, but with very minimal efforts on helping students to reflect on that experience. As per the findings of this

study, reflective practice was not common in the colleges and, therefore was singled out to be applicable not only in the teaching learning process but also in the School Practice supervisory process and when guiding students on different professional aspects when out of the classroom. The researcher devised a reflective practice laboratory for all colleges to pool all the desired constructivists principles and practices where these can be demonstrated in a professionalised amicable setting. This is a strategy to hasten instructional shift and adaptation to the demands of lifelong learning.

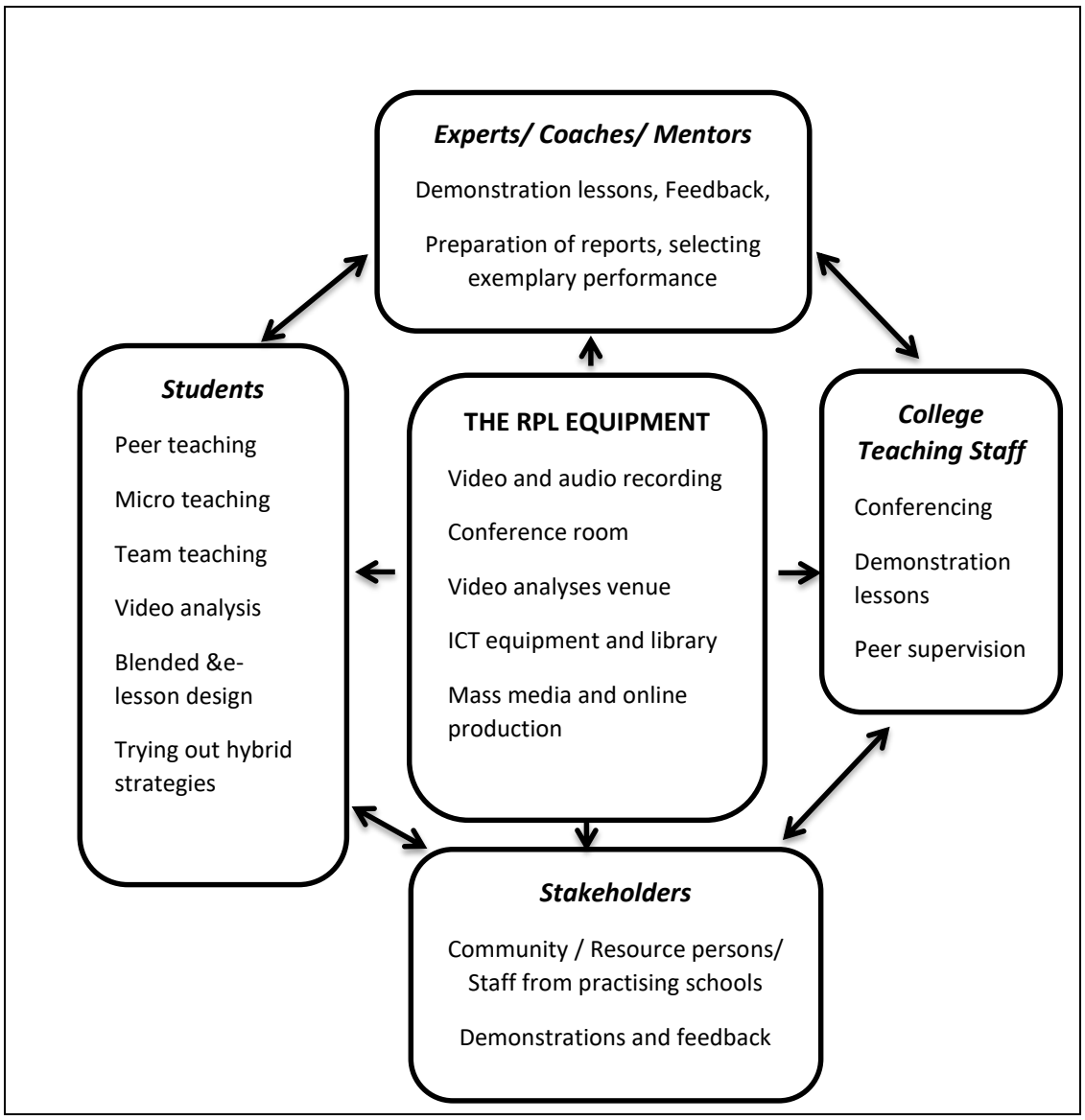
Using the reflective practice laboratory will be a scientific approach to improve teacher preparation, as well as propelling the instructional shift from the mechanistic – traditional transmission to a contextual, authentic constructivist teaching. The proposed Reflective Practice laboratory (RPL), as a strategy, applies to each of the components of this study. The RPL will improve both tutors' and students' teaching, School Practice supervision and using the constructivist – guided coaching. The elements of the laboratory will foster use of prior knowledge, dialogue, collaboration, application, hard data based feedback, self-assessment and reflection in an environment where students' critical voice, shared control, and negotiation are manifested. The equipment proposed for the laboratory will offer the basics to orientate students on the benefits, use and integration of ICT in teaching and learning.

The collaborative reflection will make students to be more active, productive and engaged in meaning making. Tutors and all teachers need to embrace integrating technology into their lessons, because students are using technological tools all the time at home and, therefore, should be available in the classroom for use, as well (Almekhlafi & Almeqdadi, 2010; Pascopella, 2009). When teachers use students' phones, tablets, mp3 players and laptops to facilitate learning, these tools are like an extension of their arm which makes students to be more engaged and interested (Gervanna, 2014).

It is the new world order that institutions and schools have computer labs, Wi-Fi, Internet access, tablets, e-book resources at the library, smart boards, projectors, speakers, and the list goes on. These tools, if well utilized and appropriately used, will support the two way process of teaching and learning: to enhance the way information is given to students and to improve learning outcomes in the students. The tutors, as well as students, need the basic technology skills, time disposition and management, and mastery of the subject matter as necessary areas of competence (Ibiloye, 2021). The benefits of lCT are that tutors teach and students learn anytime, anywhere, and the environment enables the learner to access information, interact with both materials and other learners without being location dependent (Kolb &Tonner, 2012).

The strife to improve teacher preparation requires a blended and composite strategy to suit the current times, as well as the times to come for which this study proposes devise of a Reflective practice Laboratories (RPLs). The RPL is illustrated in Figure 5.1

Figure 5.1 The Reflective Practice Laboratory (RPL)



Source: Researcher's own Devise and Invention.

Reflective practices in education have, in many ways, shown to have value as these allow students to reflect on their learning experiences within a blended learning environment. Reflective practices are, therefore, seen as a learning strategy whereby professionals become aware of their implicit knowledge base (Herrington et al., 2010). The Reflective Practice Laboratory will be in consonance with Gibbons Mode 2 of knowledge production where knowledge is generated within the context of application, always produced under an aspect of continuous negotiation and within the interests of the various actors to be involved (Gibbons et al., 1994).

In the first instance, the reflective practice laboratory conference room will serve as an appropriate venue for attending professional conferencing practices, inductions, seminars, demonstration sessions and practice in the use of educational technology, Internet and other digital forms, which are effective when developing a teacher. The use of educational technologies and integration of ICT in the RPL will allow active participation, collaboration and engagement (Gachago et al., 2013). Improvement will not only be limited to students but also will benefit the entire college fraternity. Ficke (2020) and Darling-Hammond (2012) affirm that school leaders in effective school systems must learn from experts, mentors, and peers about how to become good instructional leaders, an opportunity that the reflective practice laboratory will provide. Much like teachers, positional leaders will be continually reminded about continuous professional growth.

Secondly, the knowledge and skills needed in a digital age, where all 'content' will be increasingly and freely available over the Internet, requires students with expertise. Technological and electronic media can be fused with student-centred technological approaches that are meaningful and conducive to the ways in which today's learners engage with life-world environments (Bozalek et al., 2013; Herrington & Kervin, 2007). The technological knowledge needed ranges from low-level technologies, such as a pencil and paper, to digital technologies such as the Internet, digital video, interactive whiteboards and software programmes. The technological resources in the RPL can, as well, range from low-level equipment, such as audio-visual resources, to high-level digital equipment, which is important in enhancing new approaches of teaching.

Thirdly, the video and audio recording will be prerequisites in the reflective practice laboratory. Through a process of video and audio recording, describing, analysing, and interpreting the teaching, both the tutors and student teachers will develop an awareness of and learn more about their own teaching. This practice is strongly supported by De Monte

(2013) and Mayer (2021), whose research affirms that student teachers who received specific feedback to videotaped teaching shared with an instructional coach had higher achievement gains than student teachers not receiving coaching.

The RPL feedback sessions contain target-specific, bite-sized, actionable steps the teacher can immediately implement. Teachers can be more receptive to evaluation when there is a way to increase access to evaluation and improvement. Videos can be a useful part of professional development. It requires a coach to view a teacher's practice on video and work on instructional improvement without the need for real-time, on-site observations of teaching. This type of remote professional development, linking distant teachers to collaborators, has the promise to change the way education professionals improve their practice. The reflective practice laboratory can bring teachers from many locations together to learn by watching videos (vignettes) on instructional practices, discussing best practices, and by probing curricular materials for the best ways to incorporate them in classrooms.

Furthermore, the study proposes a video analysis of the seven stage protocol to be implemented in the suggested reflective practice laboratory. It would be a requirement for each student in a college to capture one of their presentations during School Practice on video so that the recording is subjected to several forms of analysis. This can help the students to improve on their teaching and to focus colleges on the practical preparation of students. The School Practice coordinator or any tutor in charge of student teaching assigns the video analysis as a requirement of the course. A student captures an entire lesson for others to define the task more closely, to capture evidence of a specific technique, approaches and strategies that the class has been working on. The seven stage protocol would proceed as follows: capture, revelation, upload, self-analysis, expert analysis, conference, improvement and video library.

In another instance, the tutors will have the opportunity to learn from colleagues, particularly, in a setting where there is a structure and protocol for revealing excellent teaching practices, feedback and having a group of professionals discussing and, as they learn from them. Dialogues with peer teachers can allow them to get new perspectives and to reconstruct knowledge about teaching. Peer observation is that two teachers organise a lesson, and one teaches while the other observes the class; and after the lesson, both teachers describe what happened in the classroom and detail their experience of the lesson, and discuss how the lesson could be modified next time on the basis of the descriptions; and for the next class, the role is reversed.

Furthermore, the experts in the Reflective practice laboratory will not only demonstrate to students but also coach students to refine their instructional practices. Research affirms that coaching works in conjunction with other aspects of professional development (De monte, 2013) and that, if teachers collaborate around what they learn from coaching, and that if they get to observe instruction and then talk about the observation with a coach, then it is more likely to be effective. This feature hinges on the expertise of the coach to do this work. Experienced and specialised practising tutors should be empowered to use the clinical supervision model in providing support supervision.

Finally, the reflective practice laboratory library will enable students to access professional literature or journals for reading so that the students can gain awareness of what is currently happening in the field all over the world and to construct new knowledge about teaching and conducting classroom research. Reflective, intelligent, professional teachers will always research their own practice to inform future improvements. There is a rapid development of information and communication technologies (ICT) which also is continuously transforming the way we live, work, and learn. The Teacher Training Institutions can be transformed into functional hubs for virtual learning, if the reflective practice laboratories are established. The

colleges need to prepare students to work in virtual collaborative environments so that they are prepared to participate in our global workforce. Providing students with adequate experiential training will increase their knowledge of the technology and ultimately increase their intent to use it.

5.3.4 Final Reflections

Education plays an important role of shaping any nation and is an indicator of human progress and development. It must be an education that transforms society to cope with the demands of this very fast, changing and dynamic world. The current aspirations and instructional shifts in education must strongly align to constructivist ideologies of humanization of education with an emphasis of reflective practice which has emerged as a constructivist strategy not only to respond to the research questions of this study, but also through which the desired practices can be effectively addressed to realise the aspirations of the 21st Century.

The proposed UNITE and affiliated Teacher Training Institutions (TTIs) have the potential to bring changes in the society, have the potential to shape the knowledge and skills of the future generation, and can play a critical role in preparing quality teachers for the 21st Century. Well prepared and well qualified teachers are not only agents of positive societal change, but also have a multiplier effect while executing their regular duties. Tutors in colleges must aim at developing and enabling students' knowledge construction, skills and professional attributes as a way to prepare them to teach effectively in the school systems.

With the experience of the COVID - 19 lockdowns, the educational institutions have an obligation to embrace technology. The digital age has turned knowledge into a new wealth of the 21st Century. The teaching and learning is now occurring in an increasingly online world, the use of ICT must become a pre-requisite for teacher education in terms of defining and

enabling effective teacher preparation in relation to developing ICT skills and knowledge, and ICT curriculum applications which can only be possible when the reflective practice laboratories (RPL) are in place. Lesson presentation for mass media, using and management of zoom discussions, and the use of phones for educational purposes which for long have not been well catered for in teacher preparation, will be enhanced and made more formalised using the proposed RPL experience. Teachers who wish to embed global perspectives in their teaching require reflective practices on their own identities, prejudices, choice of curriculum content and pedagogy.

5.3.5 Contribution to the Body of Knowledge

The contribution of this study is to elevate a holistic perspective of teacher preparation with emphasis on the productive use of both classroom and non-classroom based activities. The study introduces setting up and use of Reflective Practice Laboratories (RPL) in Teacher Training Institutions as a singular blending and practical strategy for quality teacher preparation. The RPL will enhance several constructivist practices that include reflection, clinical supervision, use and integration of ICT and other interventions in a proper and professional setting to effectively help to improve student teachers' performance. It will improve the art of teaching in not only Teacher Training Institutions but primary schools as well. Implementation of constructivist informed teaching will enable realising the SDG4, especially strengthening the system with the four pillars of education, specifically, experience, practice, identity and sense of belonging. The tutors will get expertise feedback on their own work at the same time have ample time to carry out demonstration lessons and to use clinical supervision effectively to help to improve student teachers' performance.

The Reflective Practice Laboratory will be a scientific approach that will offer opportunities for both pedagogical empowerment and enhancement of digitalisation which are now

recognised as prerequisites in the instructional process and resources to enable smooth crossover to the 21st Century.

Implementation and effective use of the proposed reflective practice laboratories (RPL) singled out as the researcher's contribution to the body of knowledge, will continue to emphasize the value that can enable tutors, as well as the students to learn from each other through observing lessons, feedback, coaching and mentoring, which many teachers find the most effective way to improve their practice. The proposed reflective practice laboratories in colleges will not only become a strategy to enhance constructivist informed teaching in the education system, but will also enable both tutors and students to work in virtual collaborative environments with adequate experiential and authentic preparation tailored to the demands of the 21st Century particularly enabling lifelong learning realising the aspirations of SDG4, 2030 Agenda, Vision 2040, meeting the aspirations of the Uganda National Teachers' Policy of 2019 and basis for guiding the on- going education policy review on not only transforming education but also enabling a crossover to the 21 Century.

5.4 Recommendations.

Based on the research questions, findings and discussions;

In the first instance, the study recommends the induction of college administrators, tutors and students on the operations of RPL to enable an exploration and acquaintance of inquiry, collaborative and active learning approaches, structuring a very conducive constructivist learning environment and applying technology in education. Tutors will explore learner centred methods, integrate ICT in instruction and will have an opportunity to get feedback on their teaching performance. The tutors will have a task to transform students' engagement in content via constructivist teaching models and methods. The tutors should help students to explore constructivist practices. The college administrators, too, must be knowledgeable

about constructivist practices in order to provide tutors and students with effective strategies and to support their practice.

Secondly, the study recommends a whole year School Practice to give students a more hands-on and authentic experience using collaborative and clinical supervision. The colleges need to involve head teachers of practising schools to select and allow exemplary and competent staff to coach/ mentor students. There is need for change from the traditional corporate, skill and technical model of practicum experience to one with a broader educative focus: a School Practice experience that provides students with opportunities for inquiry, for trying and testing new ideas within a collaborative relationship, and for talking about teaching and learning in new ways. For better performance, the recommended full year will enable the students to spend more time in real classrooms so that they learn how to teach by being observed or by observing experienced teachers and getting assisted by coaches/ mentors before returning to college to write exams based on real teaching experience. This will enable students to explore their beliefs and personal theories while, simultaneously, critiquing their knowledge of formal theory in context. The study suggests that tutors should integrate reflective practice, action research, portfolio development, mentorship, micro-teaching and peer supervision in the development of teachers for primary schools. Increased and regular induction needs to be provided to Principals, as well as subject heads and the rest of the tutors, on how to conduct classroom observations and portfolio supervision in schools.

Thirdly, the study recommends an induction for tutors on collaborative approaches with emphasis on the use of constructivists guided coaching to enhance students' professional growth, experience and performance. Tutors need to be helped to develop rubrics that can make students' judgment more explicit with criteria to judge complex human performance in a reliable, fair and valid manner by scoring student performance on tests, portfolios writing samples, presentations, products or other performance tasks. Identifying holistic and

accomplished teachers will require tutors to assume a full time responsibility to manage the non-classroom activities as a way to account for all the time students spend in a college.

The MoES should take up the proposed RPL strategy to not only improve teacher preparation but also to serve as a learning strategy whereby professionals will become aware of their implicit knowledge base. The facility and resources of the RPL will be open to students and entrusted to a well inducted tutor to care for and oversee day to day activities under guidance of the college administrators. The intervention would be initiated at UNITE and the affiliated college (s)/ TTIs in South Eastern Uganda and thereafter, utilising a periphery- periphery process (multiple reciprocal fits) of implementation would later be institutionalized countrywide. MOES and UNITE should devise a revised and comprehensive CTEP programme to be implemented in TTIs and all other institutions that offer teacher preparation.

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APPENDICES

Appendix I: Observation Rubric for Constructivist Principles in Classroom

Use the following criteria:

	Criteria
	Prior Knowledge
a	Students are given opportunities to access prior knowledge.
b	Students are given opportunities to reorganize/reconstruct prior knowledge.
c	Students are given opportunities to discuss prior knowledge.
d	Students have opportunities to elicit and correct misconceptions in prior knowledge.
e	Students have opportunities to resolve lesson problem based on prior knowledge.
	Learning Environment
a	Students are given opportunities to discuss learning in groups.
b	Students are given opportunities to discuss learning as a whole class.
c	The teacher provides continuous formative assessment.
d	Students are given choices in process and product.
e	Students are encouraged to share learning through dialogue.
f	The teacher provides scaffolding through comments, questions, and activities.
	Learning Activities
a	Learning is embedded in a problem-, project-, or case-based environment
b	The problem or discussion is real-life, relevant, engaging, and motivating.
c	The overarching problem can have multiple solutions.
d	The learning activities simulate reality.
e	Students are expected to obtain, record, and organize information through self-determination and regulation.
f	Students are provided opportunities for cooperation and collaboration.
g	Students have access to a variety of resources and perspectives during the learning activity.
h	Students are expected to develop arguments based on evidence rather than seeking right answers.

	Reflection & Metacognition
a	Students are given opportunities to compare new knowledge to prior knowledge.
b	Students are given opportunities to justify problem solutions to others.
c	Students are given opportunities to analyze learning through individual, group, and whole-class reflection.
d	Students are given opportunities to assess their own and each other's learning.
e	Students are given opportunities to assess their own and each other's learning.
f	Teacher feedback focuses on process and products of student learning.

Appendix 2: Observation Protocol
Section A: On classroom teaching

Time		
Prompts		Notes
Elicits prior knowledge/ helps students establish relevance		
Creates cognitive dissonance		
Requires students to apply knowledge		
Provides specific feedback		
Requires students to reflect on learning		
Provides students opportunity for collaboration/ discussion		

Descriptions
Methods used
Use of learning aids
Use and application of technology
Reflective practice activities
Assessment modes procedures
Availability of lesson plans and Schemes of work

Section B: School Practice Observation Guide

School practice preparatory activities
Tutors supervisory behaviour
Preparation and use of school practice records
Conferencing
Feedback to students

Section C: Observation Guide on Non-Classroom Based Activities

Observation checklist
Tutors availability
Informal interactions

Counselling of students

Demonstrations

Tutors participation, support and engagement in non-classroom based activities

- Co- curricular activities
- Clubs
- Duty leadership
- Assemblies school family initiatives
- Formulation of college regulations
- Workshops, conferences and seminars
- Child study

Appendix 3: Interview Guide for Tutors

Section A: On classroom instruction/ teaching

1) What beliefs do you have on the approaches of teaching?
2) What do you consider as best practice when teaching students?
3) How effective is the learner centered approach when teaching students?
4) What do you think is the best teaching approach for the 21st century?
5) What effort have you put in to enable effective implementation of the desired approaches?

Section B: On school practice

1) What beliefs do you have on clinical supervision?
2) What clinical supervision practices do you use in the supervision of students?
3) How effective is the clinical supervision when supervising students on school practice?
4) What challenges do you face when using clinical supervision?

Section C: On non-classroom based activities and professional growth

1) Besides learning in the classroom what activities do you have that enable students to grow professionally?
2) What do you think should be the appropriate manner of guiding students?
3) How do you use coaching in non-classroom based activities?
4) How effective is coaching when conducting non classroom based activities?
5) What opportunities do you give students to think about their actions?

Appendix 4: Interview guide for Students

Section A: On Classroom Teaching

Learning about real life situation (Relevance).

1. What opportunities do you have to learn about the things that relate to life here and out of college?

Learning About teaching (Uncertainty).

2. Why do you think that a teacher cannot always provide answers to problems?

Learning to Speak Out (Critical Voice).

3. What do you feel about questioning what or how you are being taught?

Learning to Learn *(Shared Control)*

4. How do you participate in selecting the way you should learn?

Learning to Communicate (Student Negotiation)

5. What opportunities do you have to talk to each other about what you learn in class?

Section B: On School Practice

1) What kind of support do you get from tutors when preparing for school practice?
2) What records do tutors prepare for you to let you know of your teaching performance?
3) How do tutors give feedback on your lesson presentation?
4) What do you think must be done to improve school practice supervision in colleges?

Section C: On non –classroom based activities and professional growth

1) Besides learning in the classroom what activities do you have at college that enable you to grow professionally?
2) How have the tutors helped you to become a professional teacher?
3) What opportunities do you have at college that enable you to think about your actions?

Appendix 5: School Practice Records Checklist (Document analysis guide)
Date:

Time		
		Notes
Record	***Quality and use***	
Supervision records		
Timelines		
Seat works		
Reflective journals		
Portfolios		
Analytical records		

Post observation and follow up records		
SP performance records/ grading		
Recorded audio or video on SP		

Appendix 6: Permissions and Informed Consent

Title of the study: *Constructivist- informed teaching and preparation of students in Teacher Training Institutions in South Eastern Uganda***.**

Investigator(s): Emmanuel Humphrey Gusango

Institution(s): Kyambogo University

Introduction

I am Emmanuel Humphrey Gusango, a Doctoral student from the Department of Foundations of Education at Kyambogo University. I am currently conducting a study for my PhD on constructivist Informed teaching and preparation of students in Primary Teachers Colleges.

This informed consent explains the study to you. After the study has been explained, any questions you may have are answered, and you have decided to participate in the study, you will be asked to sign a consent, which you will be given a copy to keep.

A brief description of the sponsors of the research project

This is a self- sponsored study being a requirement for the award of a PhD in education.

Purpose:

The study seeks to explore the implementation of constructivist informed teaching in the preparation of students in Teacher Training Institutions in the South Eastern Uganda. The study is using a phenomenological approach to collect data which will help the researcher to learn the status of tutors and student teachers practices of Constructivist informed teaching and explore factors that relate to their practices. The findings of this study will help to improve the instructional processes, pedagogical preparation of students and professional grooming of students in TTIs

Procedures:

Your participation in this study will involve collecting data through; interviews, audiotaped interviews, observations and videotaping of your lessons, document analysis and observations of professional development sessions. You will also be asked to allow us to use the data from your practicum experience in this study. These data will be used to establish the extent of use of constructivist informed teaching and related practice in the teacher preparation process.

Who will participate in the study?

You have been chosen to participate in this study because you are either a teacher educator (tutor/ school practice coordinator) or student teacher in a Primary Teachers College. Each selected participant will be interviewed at least thrice throughout the study on different occasions. The interview will last for approximately 20 minutes. Only 5 participants from each college are selected to participate in this study.

Risks/discomforts:

There is no foreseeable risk of harm or discomfort that will arise from your participation in this study. The only risk or discomfort will be the inconvenience in terms of time spent during the interview.

Benefits:

This study will tap your feelings and expressions as well as to enable you to reflect on your teaching and learning which may widen and expose you to modern approaches of instruction. You will also get feedback on findings and progress of the study, and any new information that affects you (including incidental findings) will be made available to you.

Confidentiality:

Your identity will not be revealed to any one as we shall only use codes to identify participants. Information obtained will only be accessible by the research team. Soft copies of the data will be protected by password and hard copy files will be kept under lock and key. Confidential information will only be accessed by the principal investigator.

Alternatives:

You do not have to participate in this study if you are not interested. You will not lose any benefit in case of no participation.

Cost:

There will not be any additional cost incurred as a result of participating in this study.

Questions:

If you have any questions related to the study as a research participant, you can contact the principal investigator, *Emmanuel Humphrey Gusango* on telephone number 077-263-3605 or via email: *egusango@yahoo.com*

Statement of voluntariness:

Participation in the research study is voluntary and you may join on your own free will. You have a right to withdraw from the study at any time without penalty.

If you have any issues pertaining to your rights and participation in the study, please contact the Chairperson, Gulu University Research Ethics Committee, Dr. Gerald Obai Tel: No., 0772305621; email: lekobai@yahoo.com/lekobai@gmail.com; or the Uganda National Council for Science and Technology, on plot 6 Kimera road, Ntinda, Kampala on Tel 0414705500.

Statement of consent

..... has described to me what is going to be done,

the risks, the benefits involved and my rights as a participant in this study. I understand that my decision to participate in this study will not affect me in any way. In the use of this information, my identity will be concealed. I am aware that I may withdraw at any time. I understand that by signing this form, I do not waive any of my legal rights but merely indicate that I have been informed about the research study in which I am voluntarily agreeing to participate. A copy of this form will be provided to me.

Name……Signature of participant……Date ……...

Name…….Signature of interviewer……Date……..

Appendix 7: Audio and video Recording Permission

TITLE OF STUDY: *Constructivist- informed teaching and preparation of students in Teacher Training Institutions of South Eastern Uganda***.**

INVESTIGATOR(S): Emmanuel Humphrey Gusango

If you volunteer to participate in this study and allow the researchers to collect data through; audiotaped interviews and videotaping of your lessons.

Audio Taping:

I agree to be audio taped for the purpose of this research study.

Name……...Signature of Participant……...Date……..

Name……...Signature of Interviewer……Date……..

Video Taping:

I agree to be videotaped for the purpose of this research study.

Name……...Signature of Participant……...Date……..

Name……...Signature of Interviewer……Date……..

Consent to use data in future studies:

I agree to allow the research team to use data collected and then de identified during this study in future studies.

Name……...Signature of Participant……...Date……..

Name……...Signature of Interviewer……Date……..

Appendix 8 Kyambogo University Approval

KYAMBOGO UNIVERSITY

P. O. BOX 1 KYAMBOGO
Tel: 041 - 4286792 Fax: 256-41-220464
Website: www.kyu.ac.ug

Office of the Dean, Graduate School

24th February 2020

To Whom It May Concern

Dear Sir/Madam,

This is to introduce **Mr. Emmanuel Humphrey Gusango** Registration Number **17/U/13222/GDED/PE** who is a student of Kyambogo University pursuing a Doctor of Philosophy in Education.

He intends to carry out research on **"Constructivist Informed teaching and preparation of Students in Primary Teachers colleges of South Eastern Region in Uganda"** as partial fulfillment of the requirements for the award of Doctor of Philosophy in Education.
We therefore kindly request you to grant him permission to carry out this study in your institution.

Any assistance accorded to him will be highly appreciated.

Yours sincerely,

Assoc. Prof. Muhamud N. Wambede
DEAN, GRADUATE SCHOOL

KYAMBOGO UNIVERSITY
★ 2 FEB 2020 ★
OFFICE OF THE
DEAN GRADUATE SCHOOL

Appendix 9: Sample Interview Transcript

00:00:01

Speaker 1: Yeah, it's a pleasure to have you, Mr.Batambuze, who is now my co researcher in this study, constructivist Informed teaching and the preparation of a student in colleges of South Eastern region.

00:00:24

Speaker 1: I'm happy to have you and to have you participate in this study as my co researcher and to share information and experience that you have here in the college as you prepare students.

00:00:42

Speaker 1: This interview would ever structured or not structured for purposes of getting as much information as we want, and I would allow you to feel free and express anything that you want to, because according to the concept, there is confidentiality, it is voluntary and will keep any information that you want to remain anonymous, to be anonymous., I'll give you a moment to introduce yourself so that we get to know each other.

00:01:19

Speaker 1: So you are welcome. Thank you.

00:01:22

Speaker 1: My name is Sam and I teach Agriculture Education, agriculture, education. Yes. I have been here at this college for 10 years.

Yeah. That is a very good experience of 10 years. Yes.

00:01:43

Speaker 1: So I'm here with you.

Yeah, it's a pleasure.

00:01:47

Speaker 1: Yeah. Yeah.

00:01:48

Speaker 1: As a teacher, educator, um, you have students here who come to study. Yes. And they know you have a curriculum which you use to follow to teach. Yes.

00:02:02

Speaker 1: Um, do you allow students to learn what is in the curriculum at the same time you relate it to life outside the college?

00:02:16

Speaker 1: Yeah, we actually allow them to learn strictly what is inside the college as per the curriculum.

00:02:28

Speaker 1: As part of the curriculum, because in most cases they examine on that, yes. But also there is a chance for them to learn from things outside the college.

00:02:44

Speaker 2: And for example, in my department, in my subject, agriculture, agriculture, we take them out, especially agriculture shows. We take them for the whole week and they see things there that

are displayed. Yes. What is done? They share with the farmers. So I feel that is information which is got from outside. And which relates very well with what they learn from here.

00:03:19
Speaker 1: Do you give them opportunities to demonstrate what they see out there and what they learn in the classroom.

00:03:25
Speaker 1: Demonstration is very limited, especially where maybe it requires facilitation facilities.

00:03:38
Speaker 1: And with the issue of land, here is also a problem.

00:03:44
Speaker 1: So mostly, if it requires a lot of practical or Hands-On skill, you find that somehow they are limited. They are limited. Yes, they are.

00:03:59
Speaker 1: So there is will, but the means.

00:04:05
Speaker 1: Know. Now when these students. Yes. How do you help them to understand your subject.

00:04:20
Speaker 1: I'm.

00:04:25
Speaker 1: Most of the modules we have are self study and the teacher is there to facilitate them so that the tutor is a facilitator, is a facilitator, and the modules have the information of the information.

00:04:48
Speaker 2: We are lucky that we have now the books, especially beginning this year, although originally been the past year, the tutors have been struggling a lot to look for the information, the information.

00:05:02
Speaker 1: But now. The books are there. OK. The only problem, as I have told you before, is that the practical part of it is limited.

00:05:15
Speaker 1: Yeah, you do these modules tap real life experience.

00:05:20
Speaker 1: To capture real life experience, real life situations? Or does it touch some area where they can see things in reality?

00:05:30
Speaker 1: Yes, the way they have been designed and they bring real life experience, especially in agriculture. I don't know what is in other subject, subject, but agriculture.

00:05:44
Speaker 1: They bring real life experience because, for example, there is where we discuss issues

pertaining to the teaching of agriculture in both PTCs and primary schools, and we discuss problems affecting farmers in Uganda and other such things.

00:06:07
Speaker 2: You find that we are trying to look at the real issue somewhere.

00:06:13
Speaker 1: We discuss issues to do with the gender in agriculture, looking at labor, at family level.

00:06:23
Speaker 2: You look at the parents, the children, and if they produce, who harvests, who sells or who benefits and have been sharing.

00:06:36
Speaker 1: I one time I was sharing with us unless it was from a rice growing community community.

00:06:48
Speaker 2: And I realize the men are not very much involved. The women who toil, grow the rice, keep birds(scaring birds) and they harvest.

00:07:01
Speaker 1: The man comes at the last stage to go and sellthey know how to count. And when he said you can even disappear for a month or he can.

00:07:11
Speaker 2: Anyway, you look at that and the woman who has to run the children do not benefit. And it has let down the family members, some of them, to lose interest, but they don't benefit.

00:07:28
Speaker 2: So we have issues to do with labor.

00:07:31
Speaker 1: So it relates to the life and it relates to the life outside there. Do students realize that what the learning agriculture is part of them and related to their life?

00:07:42
Speaker 1: Surely they have learnt.

00:07:45
Speaker 1: They have learned that, yes, OK, no one is interested in agriculture because I see many teachers, they opt for urban schools where they wake up in the morning, dress up. Well, go to the classroom.

00:08:01
Speaker 1: Um, they find the subject interesting subject, I feel to be they have interest in it. For example, agriculture is an elective subject, and yet they are supposed to choose between agriculture and IPS out of one hundred and sixty students, for example, in an academic year, you may find that only five of one four eight years and the rest and there is some comfort in culture. So that is, I think, teachers interest. Yeah, they have the interest.

00:08:38
Speaker 1: Now, when you teach them, do you help them to realize that as teachers you do not have all the answers to be sincere?

00:08:56
Speaker 1: You know, our students, they have in mind that everything should come from the teacher. So the teacher is the source of knowledge. The teacher is the source of the knowledge. And this issue of a tutor being a facilitator is something we are trying to bring in.

00:09:18
Speaker 1: It is just starting starting the student feel that we are giving them a lot of work and especially these students who have come.

00:09:28
Speaker 2: I have already oriented them how I've even taught them.

00:09:33
Speaker 1: I want you to write because I give them because of course, I outline for this time.

00:09:41
Speaker 1: I told them the books are in the library.

00:09:44
Speaker 1: I told them I want to see notes for each person.

00:09:50
Speaker 1: I told them that is part of the course of coursework.

00:09:55
Speaker 1: So they make make their are own notes.

00:10:01
Speaker 1: Then when we meet. When. I need to then you we discussed go through the notes, so each group presents like that. Yes.

00:10:10
Speaker 1: Um, what is your take on the knowledge of the reality?

00:10:16
Speaker 1: Do students know that they think as it was is or how did they find it?

00:10:23
Speaker 1: Um, I think they are beginning to feel that things are changing. Oh, yes, things are changing. They are beginning to feel it. Changing times need changing ways. Yes.

00:10:34
Speaker 1: Especially now with the with the the digital age age, because we realize they are also now making research, using the system.

00:10:50
Speaker 1: Yes.

00:10:51
Speaker 1: Because the advantage that they have here at Jinja PTC, we have allowed to have allowed them to have Phones.

00:11:01
Speaker 1: So here in the college, they and they have free access to the Internet. Yes, Internet. Each student has a password. Yes. They access that you do, they used to improve on agriculture.

00:11:15
Speaker 1: Where do they put it?

00:11:16
Speaker 1: Where they are getting the information, although I have not gone ahead to say make or research on this, make research on this, which I intend to maybe to do with this a lot.

00:11:30
Speaker 1: Mm hmm.

00:11:32
Speaker 1: Do you allow students to have some discussion?

00:11:38
Speaker 1: Yes, we have. Students have been grouped. They have discussion groups, groups.

00:11:44
Speaker 1: So I think they sort of discussion they share information from, OK, what are some of the common methods that you encourage students to use when they go to their primary schools to teach?

00:11:57
Speaker 1: Um, we we always encourage them to use child centered methods, especially, you know, my agriculture is integrated with science and the primary school. So, um, there are some purely agricultural topics in the primary school that, um, you missed a lesson that I was supervising the lesson, which I was a student was teaching, planting and talking about types of planting. And actually, we went …the classroom went outside to walk around and you a banana.

00:12:42
Speaker 1: Yes. And yes, she demonstrated from that garden.

00:12:47
Speaker 1: And so we encourage you of the demonstration station. Yes. And all of those self-centered centered methods as far as agriculture is concerned, only that just as I told you, in some schools where they go, they are limited with these facilities.

00:13:10
Speaker 1: Are students comfortable when you are teaching to ask you questions, asking them to them, asking them, asking?

00:13:18
Speaker 1: Yeah. Yeah, they are free to ask, even us we encourage them to ask.

00:13:23
Speaker 1: OK, yes, they keep asking the asking questions and they sometimes they ask for clarification. Yeah they do.

00:13:34
Speaker 1: When there's a problem, can they say, well we are not happy here, we have not understood this and that can they believe communicated that sometimes they are timid.

00:13:45
Speaker 1: Oh yes they are timid. I think they need encouragement to open up. OK, OK.

00:13:53
Speaker 1: Now when you are planning sessions, do you have some moments when they can also do it during the planning?

00:14:00
Speaker 1: Um, you also are planning that one is is mainly done with the tutor.

00:14:06
Speaker 1: We do it alone. Yes. Because we need to learn the lesson planning and preparation. We usually do it alone.

00:14:16
Speaker 1: OK, um, maybe I will need to gain it to learn more how to involve students, how to plan not to involve them in my planning.

00:14:26
Speaker 1: Yes, yes. Yes, yes, yes. Yeah. But mainly we have been doing it alone. So how about choosing a method.

00:14:35
Speaker 1: They said we would prefer this method.

00:14:37
Speaker 1: Do they suggest that, you know, OK, the teacher in his planning decides to use about activities, of course, even activities, even the time.

00:14:50
Speaker 1: The the time it is the to the discretion of the tutor.

00:14:53
Speaker 1: Yeah. Everything OK? OK, fine. And in your sessions the children talk to each other during.

00:15:03
Speaker 1: The decision, of course, on hold, so depending on the method, if it is easy to solve problems, yes, we allow allow so they can explain to one another.

00:15:13
Speaker 1: Yes, they can.

00:15:15
Speaker 1: And so I think we can have this interview from the beginning. Yes.

00:15:21
Speaker 1: Are they coming to see still more clarification on this? I want to thank you for your effort and input that you do in the college.

00:15:30
Speaker 1: And it is a commendable I want to thank you and are becoming more and more and more to keep sharing the experience as concerns the students, the outcome.

00:15:42
Speaker 1: Thank you for coming. Thank you so much. Yeah. OK, thank you.

Appendix 10: Research Approval by UNCST

Uganda National Council for Science and Technology

(Established by Act of Parliament of the Republic of Uganda)

Our Ref:
SS498ES

14 October 2020

Emmanuel
Gusango
Kyambogo
University
Kampala

Re: Research Approval: Constructivist informed teaching and preparation of students in Primary Teachers Colleges of South Eastern Region in Uganda

I am pleased to inform you that on **14/10/2020**, the Uganda National Council for Science and Technology (UNCST) approved the above referenced research project. The Approval of the research project is for the period of **14/10/2020** to **14/10/2021**.

Your research registration number with the UNCST is **SS498ES**. Please, cite this number in all your future correspondences with UNCST in respect of the above research project. As the Principal Investigator of the research project, you are responsible for fulfilling the following requirements of approval:

1. Keeping all co-investigators informed of the status of the research.

2. Submitting all changes, amendments, and addenda to the research protocol or the consent form (where applicable) to the designated Research Ethics Committee (REC) or Lead Agency for re-review and approval **prior** to the activation of the changes. UNCST must be notified of the approved changes within five working days.

3. For clinical trials, all serious adverse events must be reported promptly to the designated local REC for review with copies to the National Drug Authority and a notification to the UNCST.

4. Unanticipated problems involving risks to research participants or other must be reported promptly to the UNCST.
   New information that becomes available which could change the risk/benefit ratio must be submitted promptly for
   UNCST notification after review by the REC.

5. Only approved study procedures are to be implemented. The UNCST may conduct impromptu audits of all study records.

6. An annual progress report and approval letter of continuation from the REC must be submitted electronically to
   UNCST. Failure to do so may result in termination of the research project.

Please note that this approval includes all study related tools submitted as part of the application as shown below:

No.	Document Title	Language	Version Number	Version Date
1	Informed consent forms	English	VERSION 2.0	27 May 2020
2	Audio and visual permission	English	VERSION 2.0	27 May 2020
3	Research Instruments	English	VERSION 2.0	27 May 2020
4	Project Proposal	English	VERSION 2.0	
5	Approval Letter	English	VERSION 2.0	2020-05-27
5	RS6 Form	English		30 June 2020
6	RC 1 form	English		30 June 2020
7	Curriculum Vitae	English		30 June 2020
8	Informed Consent	English	2.0	26 May 2020
9	Research Instruments	English	2.0	26 May 2020

Yours Sincerely

Hellen Opolot
For: Executive Secretary
UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

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Appendix 11: Location of the study sites in the South Eastern Uganda.

Appendix 12: Lionnis (1970) story Fish is Fish

Fish Is Fish (Lionni, 1970) describes a fish that is keenly interested in learning about what happens on land, but the fish cannot explore land because it can only breathe in water. It befriends a tadpole that later grows into a frog and eventually goes out onto the land. The frog returns to the pond a few weeks later and reports on what it had seen. The frog described all kinds of things like birds, cows, and people. The adaptation to water made the fish's representations of each of these descriptions to be in a fish-like form that is slightly adapted to accommodate the frog's descriptions. The people were imagined to be fish that walk on their tailfins, birds like fish with wings, cows like fish with udders. This story illustrates both the creative opportunities and dangers inherent in the fact that people construct new knowledge based on their current knowledge.

Appendix 13: Researchers Epoche

Self-gained knowledge is always permanent and can be demonstrated in varying contexts. The role of any teacher is to enable students to learn how to learn as well as allowing a natural unfolding in various aspects of life which is only possible through constructivists teaching.

I am 54 years old with a teaching experience of over 30 years. I taught in a primary school for some time and spent the rest of the years as a tutor in Primary Teachers colleges teaching Foundations of education currently known as professional studies and Mathematics. I also served as a School practice coordinator and patron of the students (in-charge students welfare).

I used to wonder why several tutors teach and handle students contrary to the training that we had gone through. I spent considerable years teaching pedagogy and personally believed in active learning approaches. I advocated for learner centered methods which I labored to use in effort to be a model to students. We had several demonstrations with a series of micro teaching and team teaching sessions. These practices gave students confidence to teach and to work together in different contexts. I imagined that all teachers treasure learner centered approaches and use them to enable students knowledge construction. The question here is what causes tutors and teachers to opt for traditional teaching when they are informed of the values and benefits of learner centeredness.

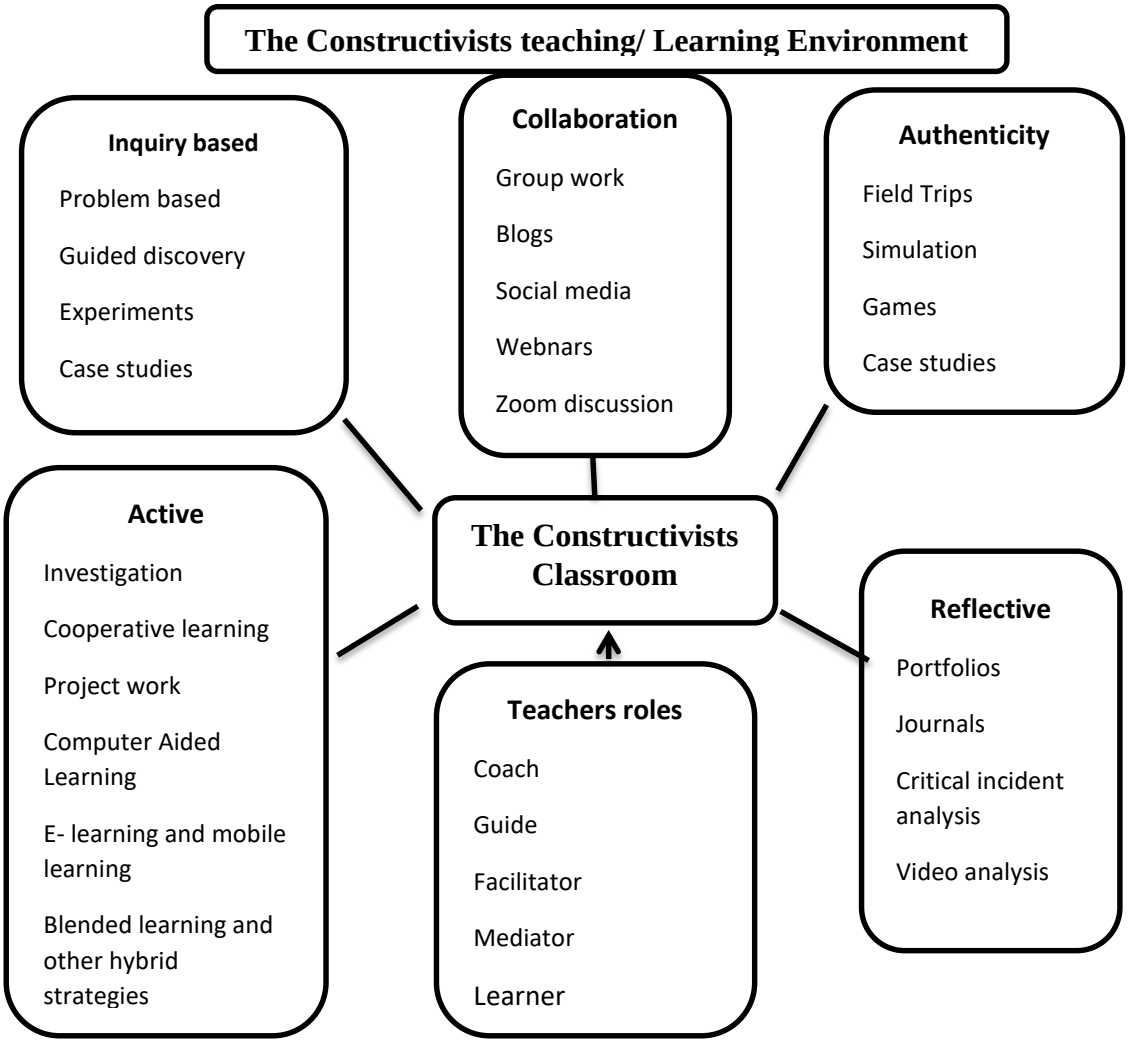
Students used to get too stressed whenever it was time for school practice due to the demands and handling of some tutors. Scheming work and structuring the classroom environment was a bother to many students. Students had challenges because tutors would demand for what they never demonstrated nor gave reasonable acquaintance to students. Supervision approach used to be less friendly and few students would enjoy the practice. I had a feeling that all

tutors embrace clinical and collaborative supervision. This caused a need to identify ways of making school practice enjoyable.

Serving as a student's patron gave me an opportunity to nurture students professionally through the day to day interaction and when implementing several non-classroom based activities. Besides the lessons the classroom, these other engagement played a meaningful role on students professionalism. I have always believed that teaching goes beyond the classroom walls and also understand the power of informal education in shaping individuals. It is important to establish why teachers get more focused on what they do in the classrooms and having little or no time for non-classroom based activities.

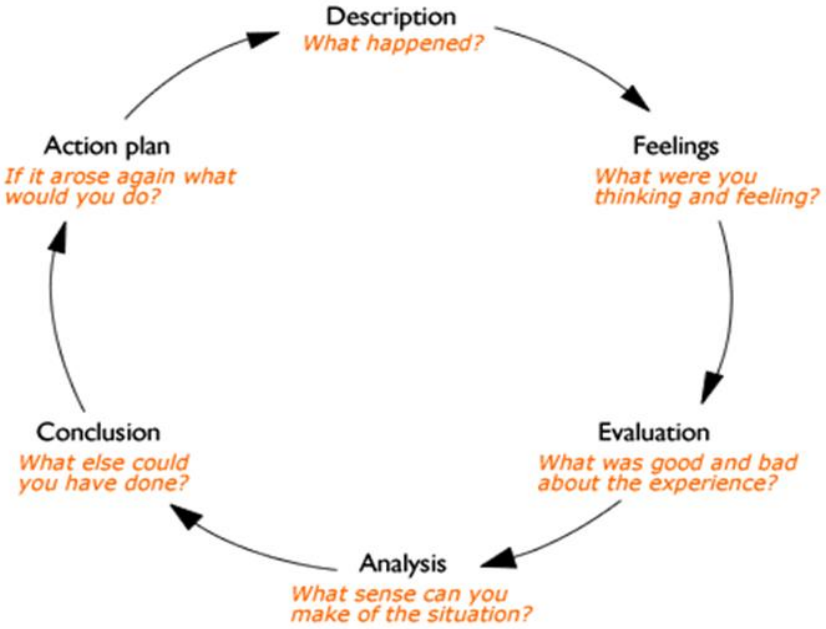
These observations indicate that any practice depends on how individuals appreciate and experience its processes. It was therefore necessary to establish why tutors rarely "walk the talk" when it comes to students learning, school practice and nurturing students professional growth.

Appendix 14: Methods, Techniques and Strategies in a Constructivists' Classroom



Source: Adapted from the constructivist classroom by Liphie Pereira and Burman Musa Sithole (2019)

Appendix 15: The Reflective Practice Cycle by Gibbs 1988



Source: Jennifer Moon (2003) Centre for Teaching and Learning Good Practice in Teaching and Learning.

Appendix 16: Themes, Description and Sample responses

Theme	Description	Sample response
Prior knowledge	Stimulates relevant knowledge	We must always build on what they know. When we (tutors) give activities, we begin with what students know then we build on it.
Cognitive dissonance	Elaborate differences between prior knowledge and new knowledge	Not all knowledge is in the books. There are some things we know.
Application of knowledge	Extended practice	They can explain to one another.
Feedback	Direct and concrete feedback	Tutors don't have time for students. In most cases they don't have time and rarely give any feedback. Tutors come, teach and go.
Reflection and meta cognition	Reflection-in-action	Yes, I liked peer teaching because it helped me to gain some confidence. And in addition to that I got some skills like planning, scheming.
Personal Relevance	Relevance of learning to students' lives	We learn things outside college like in Agriculture they take us to the farm.
Uncertainty	Provisional status of knowledge	You know, knowledge keeps on changing as you make more research, knowledge keeps on changing.
Critical voice	Legitimacy of expressing a critical opinion	When I come across difficult questions, I go to tutors.
Shared control	Participation in planning conducting and assessing of learning	Tutors do plan with us.
Students negotiation	Involvement with other students in assessing viability of	We would go in class, present, teach our fellow teachers as the tutors are behind correcting our mistakes.

	new ideas.	

Appendix 17: Details on Phases of Data Collection

Qualitative Data Collection (Phase 1): February - March 2020 Procedure: Indepth-interviews; Observation protocol Product: Transcribed interviews, Field notes, Audio and video clips	Qualitative Data Collection (Phase 2): March 2020 Procedure: In- depth interviews; Observation protocol and document analysis Product: Transcribed interviews; Field notes	Qualitative Data Collection (Phase 3): October 2020 Procedure: In- depth interviews; Observation protocol Product: Transcribed interviews; Field notes

Phase 1: Instruction of students in Primary Teachers Colleges Participants: 6 Tutors; 7 students Data collection method Observation protocol on 40-60 minute sessions (a total of 6 observed sessions) In- depth interviews of 20 min with 6 Tutors and 6 Students (a total of **13** sessions).	Phase 2: School practice supervision Participants: 6 tutors, 3 School Practice Coordinators and 6 students Data Collection: Observation protocol (a total of 6 40 min sessions) In- depth interviews of 20 min sessions with 6 tutors, 3 SPCs and 6 students (a total of **15** sessions). Document analysis with 3 School Practice Coordinators	Phase 3: Preparation of students' professional growth Participants: 4 tutors and 7 students. Data Collection: Observation protocol of 2 hrs in 3 colleges. In- depth interviews of 20 min sessions with 11 participants (a total of **11** sessions).